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ABSTRACT

This survey reported one phase of a larger project. The goals of the project are to plan and conduct a public education program on energy-related concerns that will produce an informed public, willing to support and cooperate with the strategies necessary for the long-term resolution of our energy problems. Reported in this document are the results of a survey conducted in metropolitan Grand Rapids, Michigan in February, 1976. Six hundred addresses were selected beginning with a random start. Personal interviews were conducted and a response rate of about 86% was obtained. The survey included six logic areas: (1) energy problems; (2) energy supplies; (3) energy shortages; (4) expectations of price increases; (5) adaptations to perceived energy shortages and energy cost increases; and (6) credibility of information sources. Results for individual items are reported as well as general conclusions. (RH)

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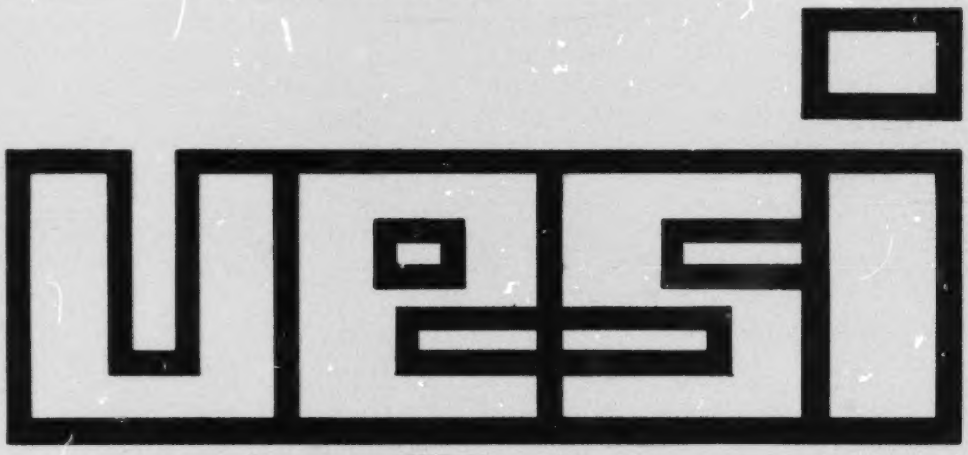

Urban & Environmental Studies Institute

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ENERGY PROBLEMS: PUBLIC BELIEFS, ATTITUDES AND BEHAVIORS

BY

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INTRODUCTION

The survey reported here is one phase of a larger project. The goals of the project are to plan and conduct a public education program on energy-related concerns which will produce an informed public, willing to support and cooperate with the strategies necessary for the long-term resolution of our energy problems.

The project components include: the building of a file of factual materials on energy supply and demand; the baseline survey (reported here) to determine current public perceptions, beliefs, and behaviors; production of sophisticated educational materials, using survey information to fine tune materials to the differing segments of the population; the educational program itself; and a final re-survey of the target population to determine measurable change, if any. The total project will cover a period of approximately two years.

METHODOLOGY

Reported results are based on a survey conducted in metropolitan Grand Rapids in February, 1976.

A. Questionnaire Development:

The survey instrument was developed during a series of meetings of the project staff, consultants, and informed non-professionals. The consultants provided expertise in market research, environmental concerns, alternative energy sources, economics, energy supply, and advertising. Final refinements and adjustments were made after completing and analyzing a pretest of 25 interviews.

The design reflects the following assumptions:

1. Considerable information exists on how the public is behaving and assumptions are made about why these behaviors occur, but little is really known about the perceptions and beliefs that underlie the behavior. Consequently, in spite of anticipated complications in the analysis, many questions should be open-ended, eliciting spontaneous statements by respondents, rather than structuring the response by suggesting answers.

2. The survey should provide checks for linkages between beliefs and behaviors for each respondent.

3. The data should provide information on the respondent's source of information and the perceived reliability of the sources.

4. The survey should provide baseline data against which possible changes at the end of the planned educational program could be measured.

5. The survey would be conducted by personal interview, using trained interviewers supplied by a professional firm.

B. The Sample:

Six hundred addresses were obtained from the 1975 Grand Rapids City and Suburban Directories, using the street directory section. A systematic sample was drawn with a random start. The sample was then plotted by census tract and a proportional number was found to be located in each census tract.

C. Conducting the Survey:

Personal interviews were conducted on four successive weekends, ending with February 21, 1976. Call-backs were made during the week, day, and evening, in order to minimize the need for replacement of addresses. Interviewers were instructed not to replace refusals. They were, however, permitted to replace addresses after two call-backs where respondents were not at home. Interviewers were provided with the specific instructions on the procedure to be used in determining the replacement address.

Interviewers were requested not to press for responses beyond the first one except on the questions concerned with conservation measures taken or to be taken in the future. If additional items were volunteered, however, these responses were recorded and appear in the report as additional volunteered responses.

D. Analysis:

Data was analyzed using the Statistical Package for the Social Sciences (SPSS) and a Xerox Sigma 6 computer at Grand Valley State Colleges.

In general, in reporting results of crosstabulations, only variations exceeding 10 percent deviation from the average responses to any one question are described here. Crosstabulations of yes-no questions against demographic data or other responses are not usually reported if the yes-no categories contained fewer than 20 respondents. Frequencies of less than 3 percent of the total sample are not normally reported individually.

E. Reliability of Data:

Interviews were completed with 515 respondents, a response rate of 85.8%.

The results are significant at the .001 level (see Appendix I for detailed table of reliability) with an average reliability of ±3.5 percent. As a further check on validity, demographic data from the survey was compared with 1970 census data for the area covered by the sample.

1. Occupation

	Census	Survey
Professional, Manager Sales and Clerical.	50%	51%
Skilled.	14%	22%
Unskilled (Laborers).	4%	4%
Farm Laborers.	.2%	-0-

Survey percentages are adjusted by the subtraction of respondents classified as housewives, retired, and unemployed to provide comparability with census data on occupations. Discrepancies in the Skilled Labor category can be partially accounted for by the inclusion of Skilled Service Workers in this category in the survey. The census enumerates Service Employees separately.

2. Education

	Census	Survey
Some High School Plus High School Graduates.	55%	45%
Some College, College Graduation and Graduate Schooling.	23%	21%

Some of the discrepancy in high school percentages can be attributed to the fact that the census counts grades 9-12 as High School. Metropolitan Grand Rapids, however, has a well developed Junior High system, so not all respondents would consider the ninth grade to be High School.

3. Age

	Census	Survey
19 - 24.	20%	14%
25 - 44.	39%	42%
45 - 64.	32%	27%
65 and Over.	16%	17%

Interviewers were instructed to ask questions only of respondents over 18 years of age and to request the interview with the Mother or Father in households containing family units. Percentage comparisons, consequently, are made only with that proportion of the population which is over 18 years of age. Young adults in the survey are fewer than those expected in the population as only those not living with older family members were interviewed.

4. Negro Population

	Census	Survey
Negro Population	7%	9%

5. Sex

This survey was deliberately structured to provide half male and half female respondents.

6. Geographic Distribution

The number of respondents from each census tract is generally proportional to the population per census tract.

With adjustments for differences in definition between categories of census data and categories of survey data, the sample population, therefore, can be considered representative of the population from which it was drawn.

CHARACTERISTICS OF GRAND RAPIDS, MICHIGAN

Metropolitan Grand Rapids is a city of approximately 350,000 people in the urbanized area, 200,000 of them in Grand Rapids, the other 150,000 in suburban communities. The city is fairly typical of mid-Western cities of this size, has a reasonably diversified economy and no unusual economic and social problems. Although not truly conservative in its politics, it is reasonably traditional and slow to accept new political ideas. There has been no effort to stress energy problems and the population in general is as well, or as poorly, informed on energy matters as populations in other similar cities.

Note: The Urban and Environmental Studies Institute will make available the data at cost, either as a data list or on computer cards, to those requesting this service.

FINDINGS

This section of the report contains the results of the survey and is subdivided by logic areas of the questionnaire.

The logic areas are:

1. Energy problems: Is there an energy problem now; will there be one in the future; reasons for the problems; will it be solved; by whom.

2. Energy supplies: Will the U. S. and the world run out of oil and natural gas; when; what should the government do to be prepared.

3. Energy shortages: Gasoline shortage of two years ago; future shortages of gasoline; natural gas; electricity; when will these occur.

4. Expectations of price increases: Gasoline, utilities (natural gas and electricity); next year; five years from now; ten years from now.

5. Adaptations to perceived energy shortages and energy cost increases: Conservation measures in last two years and planned for the future; appliance purchases in past two years and plans for the future; plans for purchases of next car; ownership of recreational vehicles.

6. Credibility of information sources: Source trusted for general information; source trusted for energy information; most truthful news media.

Other questions on the survey were asked to provide information on amounts of energy used now in order to provide a baseline against which any changes in use later could be measured. A few seemingly irrelevant ones, for example, on want ads, were included at the request of our market research consultant. Analyses of these responses are not germane to this report and are not included here. A complete frequency tabulation is included in Appendix II.

I. ENERGY PROBLEMS

A. Existence of Current Energy Problems

The public strongly believes we do have an energy problem now but one in eleven respondents doesn't know if we have a problem or not (63% yes; 28% no; 9% don't know).

Reason	Number of Respondents	% of Those Responding	% of Total Sample
Waste	130	40%	25%
Lack of planning	24	7%	5%
Scare by oil industry (greed)	23	7%	4%
Shortage	21	6%	4%
Don't know	42	13%	8%

The remainder of the responses were spread among a wide spectrum of answers.

Volunteered Second Responses were:

Reason	Number of Respondents	% of Those Responding	% of Total Sample
Lack of planning	30	28%	6%
Waste	17	16%	3%
Shortage	12	11%	2%
Foreign problems/ policies	7	6%	1%
Scare by government	7	6%	1%
Growing population	6	5%	1%
Too many cars	7	6%	1%

Over one-quarter of the respondents feel waste was the cause of the problem. Only six percent tie it directly to shortages.

Those who perceive energy problems are consistent in their beliefs. Approximately three-quarters (72%) of them think we will have energy problems in the future. Three times as many of them believe the United States and the world will run out of oil and natural gas when compared to the responses of those who do not believe we have an energy problem now.

WILL WE RUN OUT OF OIL AND NATURAL GAS?

Energy Problems Now	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
Yes	71%	69%	69%	71%
No	24%	24%	23%	24%

A much larger than expected percentage of those respondents who believe that shortages are the cause of present problems also believe in the possible exhaustion of oil and natural gas supplies.

U.S. AND WORLD WILL RUN OUT

Reasons for Current Problems	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
Shortage	48%	52%	33%	33%
Waste	35%	34%	26%	30%
Don't know	29%	19%	10%	7%
(Expected value)	(31%)	(32%)	(22%)	(22%)

More than expected of those respondents who think that shortages are the cause of current energy problems also feel that the U.S. and the world will run out of oil and natural gas in 25 years or less. Those who blame problems on the greed of the oil companies do not believe the world will run out of oil and natural gas in the next 25 years; those who believe in lack of planning as a cause are more apt than expected to believe the world will run out.

WILL RUN OUT IN 25 YEARS OR LESS

Reasons for Current Problems	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas	Expected Value
Waste	29%	28%	24%	37%	(25%)
Shortage	10%	10%	8%	7%	(4%)
Lack of planning	5%	6%	12%	11%	(4%)
Greed of oil companies	2%	3%	None	None	(4%)

Responding to the causes of the gasoline shortage two years ago, those who feel there is an energy-related problem are less willing (26%) to say there was no shortage of gasoline than those who feel there was no energy problem (35%).

Thirty-one percent of those who believe we do not have an energy problem now do not know whether to expect another gasoline shortage; 31 percent of those who do not know whether or not we have a problem also do not know whether or not to expect another shortage. Uncertainty apparently breeds uncertainty! Comparison of yes and no responses to the two questions indicates no significant deviations. Expectations of possible coming gasoline shortages, therefore, appear to be independent of perceptions of current energy problems.

In general, respondents who believe there is an energy problem now have adopted more energy conservation practices than those who do not believe we have energy problems. (For detailed discussion, see Section V, B.)

Plans for the next automobile do not reflect any significant differences in relation to belief in existing energy problems except for a reluctance to commit oneself to a decision on type. There is a clear tendency, however, for decisions to buy a compact or intermediate car and to avoid buying a van and truck to be made more frequently by those who believe we have an energy problem now.

ENERGY PROBLEMS NOW

Plans for Next Car	Yes	No	Don't Know
Subcompact	59%	34%	7%
Compact	69%	23%	8%
Intermediate	67%	25%	6%
Full size	62%	30%	7%
Van or truck	52%	43%	--
No plans	46%	35%	19%
(Expected value)	(63%)	(28%)	(9%)

On credibility of general information, those who believe we have an energy problem now are somewhat less apt to trust no one and more willing to believe in the existence of an energy problem if they obtained their information from national magazines, national politicians, or friends.

Trust for Information	Responding Yes, There is a Problem	% Deviations From Total Of Those Responding Yes
No one	54%	-9
Newspaper	67%	+4
T.V. news	65%	+2
National magazines	79%	+16
National politicians	73%	+10
Family	63%	-0-
Friends	74%	+11
(Expected value)	(63%)	

Although respondents who feel there is an energy problem appear to be slightly less apt than expected to trust no one as a source of energy information, the response is of borderline significance measured against the sample as a whole. However, respondents who get their energy information from national magazines and reports of independent researches are clearly more apt to believe in the existence of an energy problem.

Energy Information Sources	Responding Yes, There is an Energy Problem	% Deviations From Total Of Those Responding Yes
No one	57%	-6
Newspaper	57%	-6
T.V. News	65%	+2
National magazines	81%	+10
Federal government	68%	+5
Independent research	83%	+20
(Expected value)	(63%)	

The percentage responding "yes, there is an energy problem" generally increases with increasing educational level and conversely, the percentage responding "no, there is not an energy problem" declines with increasing educational level. The level of uncertainty also decreases with increasing education.

IS THERE AN ENERGY PROBLEM NOW

Education	Yes	No	Don't Know
Elementary	52%	33%	15%
Some high school	58%	30%	11%
High school graduation	56%	31%	11%
Some college	68%	27%	5%
College graduation	75%	21%	4%
Some graduate	71%	14%	14%
Graduate degree	83%	5%	0
(Expected value)	(63%)	(28%)	(9%)

Perceptions of current energy problems vary with level of occupational skills, increasing as skill levels increase.

IS THERE AN ENERGY-RELATED PROBLEM

Occupation	Yes	No	Don't Know
Large business and professional	77%	17%	6%
Small business and white collar	63%	33%	4%
Skilled labor	61%	29%	10%
Semi-skilled labor	57%	37%	5%
Unskilled labor	53%	20%	20%
(Expected value)	(63%)	(28%)	(9%)

The 45-64 age group gives fewer yeses and more noes (55-34) than the average (63-28), i.e. they are less willing to accept the existence of an energy problem, as a group, than other age groups are.

The number of blacks perceiving an energy problem is somewhat below the expected value (blacks, 56%, expected value, 63%) and the number responding "Don't Know" is elevated by a corresponding amount.

In general, the public says we have a current energy problem as a result of waste and as a result of people (governments/business) playing games. Only a few people recognize a problem in terms of supply.

B. Future Energy Problems

The public strongly believes there will be a problem (66-23) with 10 percent saying they don't know. Those that said we will have a problem were asked what they think are the reasons for (causes of) the problem. Their responses are:

Reason	Frequency	% of Those Responding	% of Total Sample
Waste	114	33%	22%
Shortage	53	15%	10%
Don't know	27	8%	5%
Lack of planning	26	8%	5%
Growing population	24	8%	5%

The rest were widely distributed.

Those that spontaneously gave a second response concentrated on the following reasons:

Reason	Frequency	% of Those Responding	% of Total Sample
Shortage	16	15%	3%
Waste	15	14%	3%
Lack of planning	14	13%	3%
Haven't developed new sources	13	12%	3%
Life style - too many conveniences	11	10%	2%

Waste again is seen as the cause of the problem by the single largest number of respondents, but the percentages of those feeling future problems will be caused by shortages is substantially greater (13% of the combined first and second responses) than on responses relating to current energy problems.

Those who perceive future energy problems are consistent in their beliefs. As stated above, they believe there are energy problems now and recognize the possibility of exhaustion of oil and natural gas supplies in the future.

When compared to those who do not believe in future energy problems, approximately 4 1/2 times as many of those who believe we will have energy problems believe the United States will run out of oil and natural gas sometime, roughly seven (7) times as many of the respondents believe that the world will run out of oil and natural gas sometime.

WILL WE RUN OUT OF OIL AND NATURAL GAS

Future Energy Problems	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
Yes	79%	76%	84%	82%
No	16%	17%	11%	13%

However, optimism is high; three quarters of those who believe we will have energy problems in the future also believe they will be solved.

Responding to the causes of the gasoline shortage two years ago, those who feel there will be an energy problem in the future are less willing to say there was no shortage of gasoline two years ago (27%) than those who feel there will be no energy problem (36%).

Comparison of expectations of future gasoline shortages and future energy problems shows more differentiation than the similar comparison with present energy problems. The level of uncertainty shows more important variations and there is somewhat more correspondence between those who believe there will be no future gasoline shortages and those who do not believe we will have a future energy problem.

WILL THERE BE ANOTHER GASOLINE SHORTAGE

Future Energy Problem	Yes	No	Don't Know
Yes	54%	41%	24%
No	31%	46%	37%
Don't know	14%	11%	37%
(Expected value)	(66%)	(23%)	(11%)

It is interesting to note that 31 percent of those who do not expect a future energy problem do expect future gasoline shortages. This is consistent with the fact that most people did not think the previous gasoline shortage was related to supply problems.

In the longer time frame of this question, fewer respondents have no plans for their next car, but three-fifths (61%) of those believing we will have future energy problems are planning to buy intermediate or smaller sized cars while approximately two-fifths (43%) of those who do not believe in future problems plan to buy smaller cars. Percentage distributions of those planning to buy each type of automobile show this even more clearly.

BELIEF IN FUTURE ENERGY PROBLEMS

Plans for Next Car	Yes	No	Don't Know
Subcompact	66%	28%	7%
Compact	71%	17%	9%
Intermediate	75%	19%	7%
Full size	61%	27%	11%
Van or truck	67%	29%	5%
No plans	43%	31%	27%
(Expected value)	(66%)	(23%)	(11%)

There are, of course, other factors which influence preferences in types of cars. For example, professionals and managers of big business are more apt than expected to plan for smaller cars (compact, 33%; expected value, 23%) as are respondents with graduate training (subcompact, 17%; expected value, 6%).

Women are more willing to plan for smaller cars, less willing to plan for larger cars.

Plans for Next Car	Male	Female
Subcompact	44%	52%
Compact	41%	58%
Intermediate	53%	46%
Full size	62%	38%
Van or truck	76%	24%
(Expected value)	(50%)	(50%)

Differentiations by age grouping fit well with sociological findings. For example, the under 25 age group is more apt than expected to plan for subcompacts (24%, expected value, 14%); three quarters of the sport car fans are under 45, and the elderly tend to have not made any plans for a car purchase.

Respondents who believe there will be an energy problem in the future have adopted more conservation measures than those who do not believe in a future energy problem. (Section V, B discusses this in some detail.)

On credibility of sources of general information, those who believe we will have energy problems are somewhat less apt to trust no one. If their information comes from T.V. news broadcasts or from national magazines, they are more apt to believe in the possibility of a future energy problem.

Trust for Information	Responding Yes, There will be a Problem	% Deviations From Total Of Those Responding Yes
No one	57%	-9
Newspaper	67%	+1
T.V. news	78%	+12
National magazines	95%	+29
Politicians	69%	+3
Church	52%	-14
Family	66%	-0-
Friends	58%	-8
(Expected value)	(66%)	

Although respondents who feel there will be an energy problem appear to be slightly less apt than expected to trust no one as a source of information on energy concerns, the response is of borderline significance when measured by the reliability of the sample as a whole. If their information, however, came from the newspapers, they were clearly more apt to believe in a future energy problem.

Trust for Information	Responding Yes, There will be a Problem	% Deviations From Total Of Those Responding Yes
No one	60%	-6
Newspaper	82%	+16
T.V. news	62%	-4
National magazines	71%	+5
Federal government	63%	-3
Independent research	71%	+5
(Expected value)	(66%)	

The percentage responding yes, there will be future energy problems generally increases with increasing educational level and conversely the percentage responding no, declines with increasing educational level. The relationship is very similar to that illustrated above for respondents' attitudes toward current energy problems.

The distribution varies in a similar manner with level of occupational skills, with awareness of the potential for future energy problems increasing as the level of occupational skills increase. The relationship, however, is much less clear-cut than it is when discussing current energy problems.

When these responses are broken down by age, we find the percentage believing we will have future energy problems decreases with increasing age. There is a corresponding increase in the don't know category with increasing age.

Blacks are much less pessimistic than the white population about the possibility of future energy problems.

	Will Have Problems	Will Not Have Problems	Don't Know
Caucasians	69%	20%	10%
Blacks	44%	36%	16%

In general, the public says we will have future energy problems caused by waste and the lack of an organized approach to the problem. The number of people relating those problems to supply limitations is still very small.

C. Will the Problems Be Solved?

This type of question probes the degree of optimism toward the future. Almost two-thirds of the public believe the problem will be solved. The remaining group divides between believing it will not be solved and uncertainty (Yes, 62%; no, 14%; Don't Know, 10%).

According to those who believe solutions will be found, the solutions will come from the following sources:

Who Will Solve	Number of Respondents	% of Those Responding	% of Total Sample
Concerned people	60	17%	12%
Federal government	53	15%	10%
Scientists	37	11%	7%
Develop solar energy	32	9%	6%
Use other sources	20	6%	4%
Use energy more wisely	17	5%	3%
Other *	30	9%	6%
Don't know	40	12%	8%

*No more than one percent in any one response.

Remaining responses were spread over a wide spectrum. Those that spontaneously provided a second response gave:

Who Will Solve	Number of Respondents	% of Those Responding	% of Total Sample
Use othr sources	19	19%	4%
Federal government	18	18%	4%
Develop solar power	13	13%	3%
Concerned people	11	11%	2%

It seems that the general level of belief in the technological fix has diminished. Only one quarter of the total sample suggested clearly technological solutions. Fourteen percent (14%) of the combined total believe someone out there has an answer and will solve the problem for us. Answers from the other 50 percent of the respondents range from "There will be no solution" (74 respondents) to "The Lord will see to it" (5 respondents).

Fourteen percent think the Federal government will solve the problem. There is some indication of the type of solution expected by these respondents. When asked what the government should do to be prepared in the case of exhaustion of oil and natural gas supplies, about two-thirds (65%) of all those responding (46% of the total sample) indicate that the government should develop new or expand existing technology to meet the coming needs (See Section II, P. 20). Combining those that believe in technological solutions with that portion of respondents who believe the government should promote technological development of resources suggests that about one-third of the public believes in the technological fix. This is a lower figure than one might expect from popular conceptions of the strong orientation of the U.S. to technological solutions.

Responses to who will solve the problem show some interesting changes from suggestions that might have been expected ten years ago. For example, 8 respondents said consumers working together, 7 respondents said more information to the people will solve the problems. Other categories, such as less affluence, use energy more wisely, mass transit, carpools, in short, the conservation approach, were also mentioned.

When those who believe the problems will be solved were asked about their reasons for the gasoline crisis two years ago, no really significant deviations in responses appeared, although of the small group of the total sample (26 respondents) who think that poor management, control, and distribution were the cause, all but two believed all energy problems would be solved.

On credibility of general information, those that believe the energy problems will be solved are more apt to trust newspapers and national magazines that would be expected; those who do not believe in the possibility of solutions are more likely to believe national politicians.

Who Respondents Trust	Responses to Will The Problem Be Solved		% Deviations From Total Of Those Responding Yes	
	Yes	No	Yes	No
No one	54%	14%	-7	-0-
Newspaper	74%	11%	+13	-3
T.V. news	64%	16%	+3	+2
National magazines	74%	16%	+13	+2
National politicians	58%	23%	-3	+9
Family	53%	16%	-3	+2
Friends	60%	13%	+9	-1
(Expected value)	(62%)	(14%)		

On the credibility of energy information, those that believe the energy problems will be solved are more likely to consider the Federal government and newspapers as reliable sources of energy information, less likely to consider independent researchers as reliable and less likely to accept what they get from television news. Interestingly enough, those who feel the problems will not be solved are more apt to consider independent researchers and national magazines as reliable.

Who Respondents Trust on Energy	Responses: Yes, Problem Will Be Solved	% Deviations From All Those Responding Yes	Responses: No, Problem Will Not Be Solved	% Deviations From All Those Responding No
No one	54%	-7	22%	+8
Newspaper	72%	+11	14%	-0-
T.V. news	52%	-9	17%	+3
National magazines	62%	+1	24%	+10
Federal government	78%	+17	7%	-7
Independent research	42%	-19	33%	+19
(Expected value)	(62%)		(14%)	

If respondents say they don't know if there will be a solution to energy problems, more of them than expected also answer they don't know who they trust for information. One quarter of those who feel concerned people would solve the problem trusted no one as a source of energy information.

There are interesting variations in sources of reliable energy information when compared to the responses given to who would solve our energy problems.

Who Will Solve	Source of Reliable Energy Information	%	(Expected Value)*
Concerned people	Don't know	27%	(12%)
Federal government	No one	20%	(10%)
Scientists	No one	25%	
	Newspapers	19%	(7%)
	Federal government	19%	
Develop solar energy	T.V. news	14%	(6%)
	Don't know	14%	
Use other sources	No one	38%	(4%)
Use energy more wisely	T.V. news	24%	(3%)

*No responses of less than twice the number expected are included.

Apparently, some believable messages on conservation and solar energy have been presented on television news broadcasts; believable information on the activities of scientists comes from newspapers and the Federal government. There is a tendency to expect the Federal government to do something, even though the respondent does not believe anything he hears. Those who believe concerned people will solve our problems show a tendency to simply be optimistic, as 27 percent of them don't know who to trust.

There are no significant variations in expectations of solutions to energy problems across occupational levels except that fewer than expected of those who are retired expect solutions to be found. Respondents at the lowest educational levels tend to be less apt than expected to believe solutions will be found (50% of those finishing elementary school compared to 61% of the total sample). Older respondents are also more pessimistic. As age increases, expectations of finding solutions decreases, of not finding solutions increases.

Although males and females are relatively similar in their expectations of finding solutions to energy problems, more women than men (31 women, 18 men) respond Don't Know. (This characteristic holds throughout the sample, see later sections.) Seventy percent (70%) of those who see solar energy as a solution are men; 70 percent of those who believe in a solution but don't know who would find it are women.

Blacks are much more pessimistic than whites about the possibility of finding a solution and less aware of possibilities. Fifty-eight percent (58%) had no answer to offer when asked who should solve the problem.

WILL ENERGY PROBLEMS BE SOLVED

	Yes	No
Caucasians	65%	13%
Blacks	40%	24%

It is interesting to note that no blacks indicated developing solar energy as a solution to energy problems.

In general, we can say that while most of that part of the public who believes the U.S. has or will have energy problems believes the problems will be solved, there is no agreement as to where the solution is coming from.

II. ENERGY SUPPLIES

Half or better of the public does not appear to believe that the U. S. will run out of oil or natural gas (oil; yes, 31%; no, 54%: natural gas; yes, 32%, no, 49%), although the total sample distribution is not statistically significant on this question. However, there is a strong belief that the world will never run out of oil and natural gas (oil; yes, 22%, no, 70%: natural gas; yes, 22%, no, 63%). This pair of questions is significant at the .001 level and tends to confirm the findings on U.S. supplies. Only sixteen percent or less of the total sample appears to believe that the U.S. might run out of oil and natural gas in the next 25 years; 5 percent or less believe the world will run out in the next 25 years. Expectations of exhaustion of oil supplies are lower than those for natural gas. Belief in shortages is tied to belief that supplies will be exhausted (See Section III, B).

Comparing reasons for the gasoline shortage two years ago and possible exhaustion of oil and natural gas suggests some significant relationships. Respondents who believe the gasoline shortage was caused by the Arab embargo or by political decisions (including the government holding back supplies) tend to believe that oil and natural gas supplies will be exhausted. Conversely, those whose belief in the Arab embargo and political reasons as causes of the gasoline shortage is lower than expected, tend to believe we will never run out of oil and natural gas. If, however, respondents believe that the gasoline shortage was deliberately caused by industry, there is a slight tendency to believe that oil and natural gas supplies will never be exhausted. Interestingly enough, those who do not believe there was a shortage show no significant deviations from total sample percentages on the oil and natural gas supply questions.

U.S. AND WORLD WILL RUN OUT OF OIL AND NATURAL GAS

Reasons For Gasoline Shortage	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
No shortage	27%	29%	17%	19%
Raise prices	26%	29%	22%	22%
Political reasons	39%	42%	32%	34%
Poor management	32%	40%	12%	28%
Arab embargo	50%	54%	46%	38%
Waste	44%	33%	19%	19%
Industry generated	28%	21%	13%	8%
Don't know	9%	9%	6%	3%
(Expected value)	(31%)	(31%)	(22%)	(22%)

U.S. AND WORLD WILL NOT RUN OUT OF OIL AND NATURAL GAS

Reasons For Gasoline Shortage	U.S Oil	U.S. Natural Gas	World Oil	World Natural Gas
No shortage	55%	50%	77%	67%
Raise prices	59%	56%	74%	72%
Political reasors	44%	42%	60%	53%
Poor management	48%	40%	84%	52%
Arab embargo	46%	29%	42%	42%
Waste	44%	56%	74%	63%
Industry generated	62%	56%	74%	77%
(Expected value)	(54%)	(49%)	(70%)	(63%)

It is clear that those who expect an electricity shortage are more prone to believe U.S. and world supplies of oil and natural gas will be used up and those who do not expect an electricity shortage are less prone to believe in possible exhaustion of supplies. Not unexpectedly, those who don't know whether or not to expect a shortage of electricity tend to have a similar uncertainty in regard to possible exhaustion of oil and natural gas.

YES, OIL AND NATURAL GAS SUPPLIES WILL BE EXHAUSTED

Electricity Shortage	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
Yes	42%	44%	35%	32%
No	40%	29%	18%	19%
(Expected value)	(31%)	(32%)	(22%)	(22%)

NO, OIL AND NATURAL GAS WILL NOT BE EXHAUSTED

Electricity Shortage	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
Yes	40%	33%	56%	49%
No	61%	57%	77%	70%
(Expected value)	(54%)	(49%)	(70%)	(63%)

DON'T KNOW IF OIL AND NATURAL GAS SUPPLIES WILL BE EXHAUSTED

Electricity Shortage	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
Yes	18%	22%	9%	17%
No	10%	14%	4%	10%
Don't know	39%	44%	33%	42%
(Expected value)	(14%)	(18%)	(8%)	(14%)

(Percentages in parenthesis indicate the distribution of yes, no, or don't know responses to the supply question.)

In general, those who expect an electricity shortage in the next ten years are more apt than expected to believe oil and natural gas supplies will be exhausted, less apt than expected to believe supplies will not be exhausted.

WILL THE OIL AND GAS SUPPLIES BE EXHAUSTED

How soon	U.S. Oil		U.S. Natural Gas		World Oil		World Natural Gas	
	Yes	No	Yes	No	Yes	No	Yes	No
0-4 years	42%	42%	46%	38%	33%	58%	31%	56%
5-10 years	32%	47%	32%	35%	32%	59%	29%	44%
(Expected value)	(31%)	(54%)	(33%)	(49%)	(22%)	(70%)	(22%)	(63%)

It is, however, interesting to note that 17 percent of those expect an electricity shortage also expect a gasoline shortage and 29 percent of those who do not expect an electricity shortage do not expect a gasoline shortage; i.e. 46 percent of the sample are completely consistent on these two questions. Respondents who don't know whether or not to expect shortages account for 19 percent of the total. Nevertheless, 29 percent of the respondents do not expect an electricity shortage but do expect a gasoline shortage. As the questionnaire did not contain a probe for reasons for expecting future gasoline shortages, it is not possible to account for this inconsistency.

Plans for the type of car to be purchased next tend to be consistent with beliefs regarding possible exhaustion of U.S. and world oil supplies. If respondents plan to buy subcompacts or intermediates, they tend to be more apt than expected to believe that oil supplies will be exhausted. If they plan to buy full size cars, they are less apt to believe in the possibility of disappearing oil supplies; this tendency is even stronger

if they plan to buy a van or truck. Conversely, of course, plans to buy full size cars or vans or trucks are greatly strengthened by a belief that oil supplies will not be exhausted. Forty-four percent (44%) of the respondents who have plans for buying a second car as well favor compacts or subcompacts. Consistently more of these respondents than expected believe the U.S. and world will run out of oil and natural gas. It is, however, possible that respondents are not as sure of an endless supply of oil as they appear to be. One result of their optimism is a tendency to not have made plans for their next car. Could this indicate a wait and see attitude?

WILL RUN OUT OF OIL

Plans For Next Car	U.S. Oil	World Oil
Subcompact	55%	38%
Compact	29%	22%
Intermediate	38%	26%
Full size	24%	15%
Van or truck	19%	5%
No plans	12%	8%
(Expected value)	(31%)	(22%)

WILL NOT RUN OUT OF OIL

Plans For Next Car	U.S. Oil	World Oil
Subcompact	42%	52%
Compact	52%	69%
Intermediate	51%	68%
Full size	62%	82%
Van or truck	76%	90%
No plans	67%	79%
(Expected value)	(54%)	(70%)

Respondents who trust national politicians or who read national magazines are most likely to feel that the oil and natural gas supplies will be exhausted in the future. If one looks at just those who feel supplies will be exhausted in the next 25 years, there is a tendency in all four questions for those who trust national politicians as sources of information to be most consistently over-represented. However, numbers of respondents in this category are too small to permit the statement to be made with any certainty.

U.S. AND WORLD WILL RUN OUT OF OIL AND NATURAL GAS

Source of Reliable Information	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
No one	32%	28%	21%	20%
Newspaper	33%	33%	15%	20%
T.V. news	22%	24%	22%	16%
National magazines	42%	42%	26%	26%
National politicians	46%	58%	38%	35%
Church	17%	22%	13%	9%
Family	21%	26%	18%	18%
Friends	32%	32%	21%	32%
(Expected value)	(31%)	(32%)	(22%)	(22%)

Respondents who trust national magazines or the Federal government for energy information are more apt than expected to believe that the U.S. and the world will run out of oil and natural gas.

WILL RUN OUT OF OIL AND NATURAL GAS

Source of Energy Information	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
No one	29%	28%	19%	19%
Newspaper	26%	28%	18%	20%
T.V. news	23%	23%	21%	13%
National magazines	48%	38%	38%	43%
Federal government	46%	59%	34%	27%
Independent research	29%	42%	25%	21%
(Expected value)	(31%)	(32%)	(22%)	(22%)

There is a general trend for decreasing expectations of oil and natural gas exhaustion as occupational skill levels decrease. The trend is more pronounced as one moves from U.S. oil supplies, a question which has received considerable attention, to world natural gas supplies, a question about which the public has little information.

WILL RUN OUT OF OIL AND NATURAL GAS

	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
Professionals, large business, management	40%	45%	40%	34%
Small business, white collar	32%	30%	21%	22%
Skilled labor	28%	41%	26%	31%
Semi-skilled labor	29%	26%	14%	13%
Unskilled labor	27%	27%	27%	13%
(Expected value)	(31%)	(32%)	(22%)	(22%)

Similarly expectations of exhaustion tend to increase as educational levels increase.

WILL RUN OUT OF OIL AND NATURAL GAS

	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
Elementary	13%	24%	20%	13%
Some high school	26%	27%	12%	16%
High school graduation	29%	29%	20%	22%
Some college	34%	34%	20%	20%
College graduation	32%	40%	31%	35%
Some graduate work	36%	36%	43%	28%
Graduate degree	50%	40%	35%	28%
(Expected value)	(31%)	(32%)	(22%)	(22%)

The young are much more apt to expect exhaustion of oil and gas supplies. This expectation consistently decreases with age. Furthermore, the less information available to the public, as one moves from U.S. oil to world natural gas supplies, the less the tendency across all age groups to believe supplies will run out.

WILL RUN OUT OF OIL AND NATURAL GAS

Age	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
Less than 25	43%	39%	27%	27%
25 - 44	31%	32%	24%	23%
45 - 64	30%	31%	23%	21%
65 and over	20%	27%	11%	17%
(Expected value)	(31%)	(32%)	(22%)	(22%)

Men tend to be more pessimistic than women.

WILL RUN OUT OF OIL AND NATURAL GAS

	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
Male	36%	42%	30%	29%
Female	25%	21%	14%	14%
(Expected value)	(31%)	(32%)	(22%)	(22%)

The public's uncertainty as to proper measures to take to avoid the consequences of possible long term oil and natural gas exhaustion is strongly indicated: 54 percent have no answer or state that they don't know what the government should do. Of these, 47 percent refuse to respond. Those responding are a sub-group of 273 respondents. First responses were:

Response	Number of Respondents	% of Group Responding	% of Total Sample
Research other sources	112	41%	22%
Develop solar energy	30	11%	6%
Increase nuclear power	15	5%	3%
Rationing	12	4%	2%
Stockpile energy	11	4%	2%
Compromise with other nations	10	4%	2%
Develop synthetic fuel from coal	8	3%	2%
Mass transit	6	2%	1%
Don't know	37	14%	7%

Other responses were widely scattered. One hundred three respondents (20% of total sample) volunteered a second response; answers concentrated on "develop solar", (5% of total sample), "research other sources", (4%), and "increase nuclear power" (3%).

III. ENERGY SHORTAGES

Although the distribution of responses was not significant at the .05 level for the questions which asked if there would be gasoline and natural gas shortages, the question on potential shortages of electricity was significant at the .001 level. The existence of a series of clear-cut trends when the three questions are combined tends to lend credibility to the responses on gasoline and natural gas. (See Figures 1 and 2.)

Further examination of the questions concerning when these shortages will appear, all significant at the .001 level, tend to further substantiate the data.

Respondents who expect shortages, expect them to appear in the near future. Those few who do expect shortages but do not expect them in the next 20 years might as easily have said they do not expect shortages. In either case, their present expectations of shortages would not tend to affect their behavior in the critical years ahead.

A. Gasoline Shortage Two Years Ago

We have already experienced one difficult period of supply shortage, the gasoline shortage two years ago; the public appears to believe it was a fraud. Twenty-nine percent (29%) of them don't believe there was a crisis; another 19 percent believe it was a manuever to raise prices; another 20 percent believe it was manipulated either by the government (12%) or industry (8%). A small number of spontaneous second responses reinforce the pattern. "To raise prices" is the most common response at 16%, with "political government holding back" second at 4%. Many of the less frequently mentioned responses (both first and second) reflect the same feelings. A breakdown of the responses is given in the Appendix.

Thirty-eight percent (38%) of the sample gave spontaneous second responses. On combining responses, it appears that 32% do not believe there ever was a shortage, 35 percent believe it was engineered to raise prices, and another 27 percent believe it was manipulated by industry or government, (industry, 11%, government, 16%). Only a total of 6 percent tied it to the Arab embargo on first or second responses.

Comparisons between responses to "Will we have an energy problem in the future" and the cause of the gasoline shortage two years ago showed that those who believe the shortage was caused by poor management or the Arab embargo are more apt than expected to believe we will have an energy problem (poor management, 84%; Arab embargo, 79%; expected value, 65%).

Respondents who think the gasoline shortage two years ago was caused by the Arab embargo or manipulated by the government are more apt than expected to think the U.S. and the world will run out of oil and natural gas. They are very unlikely to say they don't know if we will run out.

FIGURE 1

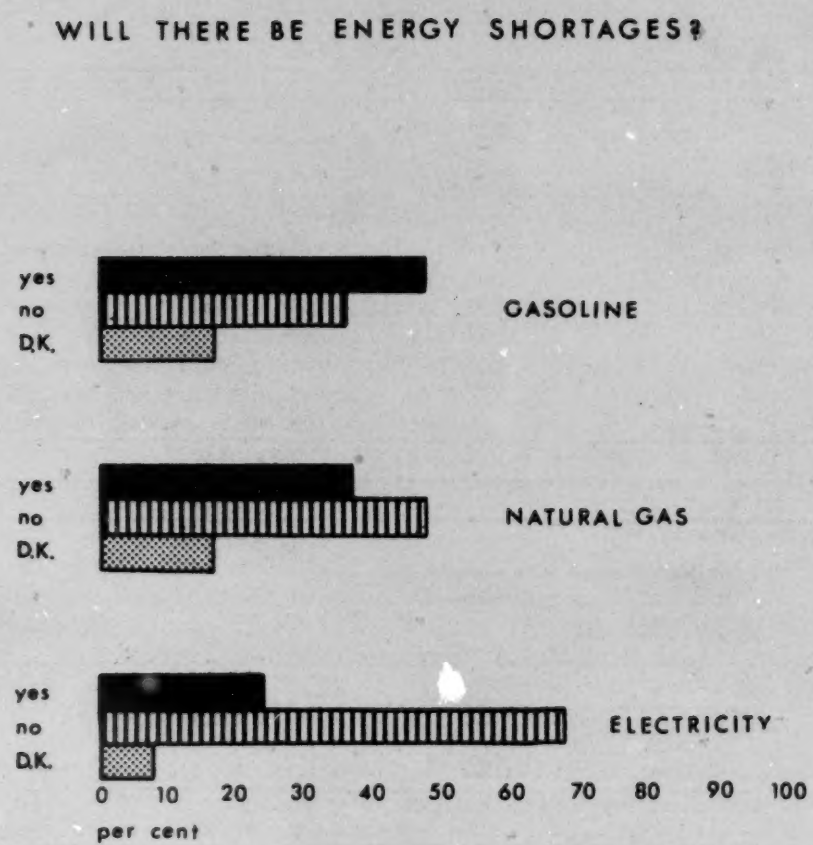
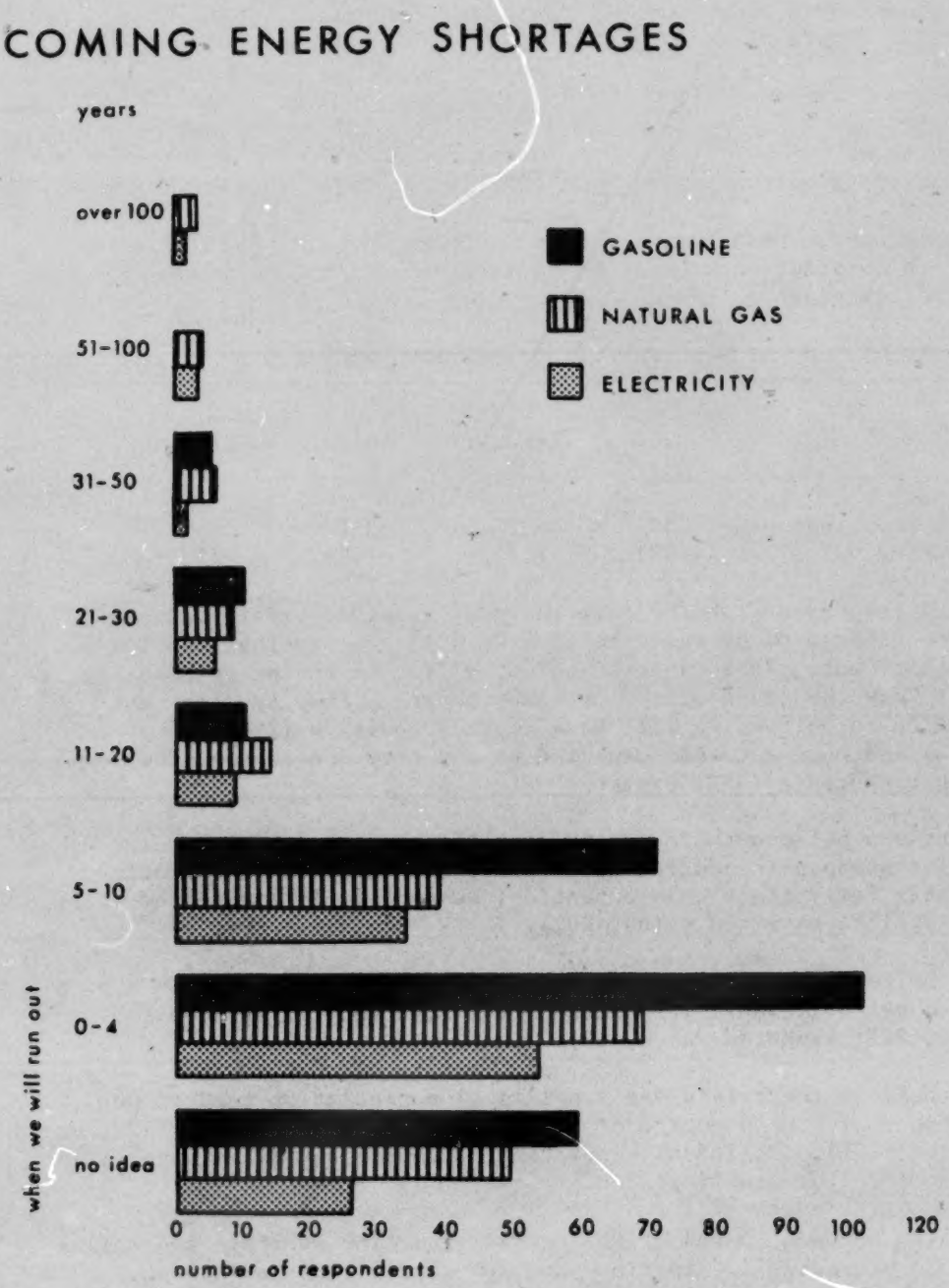

WILL THERE BE ENERGY SHORTAGES?
yes
no
D.K.
GASOLINE
yes
no
D.K.
NATURAL GAS
yes
no
D.K.
ELECTRICITY
0 10 20 30 40 50 60 70 80 90 100
per cent

FIGURE 2


COMING ENERGY SHORTAGES
years
over 100
51-100
31-50
21-30
11-20
5-10
0-4
no idea
when we will run out
GASOLINE
NATURAL GAS
ELECTRICITY
0
10
20
30
40
50
60
70
80
90
100
120
number of respondents

WILL RUN OUT OF OIL AND NATURAL GAS

Reasons For Gasoline Shortage	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
Embargo	50%	54%	46%	38%
Political	38%	42%	32%	34%
Don't know	9%	9%	6%	3%
(Expected value)	(31%)	(32%)	(22%)	(22%)

On the other hand, those that say they don't know why we had a gasoline shortage are more apt than expected to say they don't know if we will have another shortage.

DON'T KNOW IF WILL RUN OUT OF OIL AND NATURAL GAS

	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
Don't know reason	26%	32%	21%	26%
(Expected value)	(14%)	(18%)	(8%)	(14%)

Many of the respondents who believe the past gasoline crisis was caused by the Arab embargo or by waste believe we will have another one (Arab embargo, 63%; waste, 78%; expected value, 47%). On the other hand, if they don't know the cause of the previous shortage they are less apt than expected to believe we will have another shortage (29%; expected value, 47%) and more apt than expected to say they don't know if we will have another shortage (35%; expected value, 16%).

Respondents who believe there was no gasoline shortage two years ago tend to give newspapers and family as sources of reliable information significantly fewer times than expected (newspapers, 15%; expected value, 29%; family, 15%, expected value, 29%).

Those who believe that the crisis was manipulated by big business show a tendency to get believable information from a variety of sources (no single source, 22%; expected value, 8%).

Those who believe the crisis was a political manipulation tend to put faith in the church as a source of reliable information (church, 22%; expected value, 12%). Political separation of church and state apparently reflects real cultural differences.

Relationships between causes of the earlier gasoline shortage and reliable sources of energy information show few significant deviations. However, although very small numbers are involved in every case, it is interesting to note that respondents who believe the crisis was caused

by the Arab embargo are significantly more apt than expected to believe energy information in national magazines (national magazines, 14%; expected value, 5%). On the other hand, respondents who feel that the crisis was deliberately planned in order to raise prices either don't read or don't believe national magazines (national magazines, 10%; expected value, 20%: number of these respondents trusting national magazines, 2; total number of respondents trusting national magazines, 21). The 39 respondents who believe big business created the shortages tend to have a significant preference for independent researchers as a source of energy information (independent researchers, 21%; expected value, 8%).

Respondents show some variation by demographic characteristics in responses to the causes of the gasoline shortage two years ago. Over one-third (37%) of the professional and large business manager category feel that the gasoline shortage of two years ago was created by government manipulation, (expected value, 17%), whereas one quarter (26%) of the skilled labor think it was caused by industry manipulation (expected value, 16%). Both groups were less apt than expected to say there was no shortage.

Almost one-third (30%) of those with only an elementary school education think the gasoline shortage was manipulated to raise prices (expected value, 20%); none think it was connected to the Arab embargo. All age groups give no shortage as the "cause" most often but the elderly are particularly likely to offer this response. Males and females are fairly evenly distributed except that women are significantly less apt to give the Arab embargo as a cause, more apt to say waste.

B. Future Shortages

Comparisons of responses on the possibility of future energy shortages again shows a consistent correspondence between beliefs and behaviors.

Only 13% of the respondents who believe we will have another gasoline shortage do not believe we have an energy problem. Even more pronounced, only 9 percent of those who believe we will have another gasoline shortage believe we will not have an energy problem in the future.

Consistency is still greater in those who expect a future natural gas shortage. Only 8 percent who expect such a shortage do not believe in present energy problems; only 5 percent of those who expect a shortage do not believe in future energy problems.

Only 4 percent of those who believe we will have an electricity shortage do not believe we have an energy problem now; only 2 percent of those who believe in a coming electricity shortage do not believe we will have energy problems in the future.

Conversely, of those who do not believe in another gas shortage, 22% believe we have energy problems now, 21 percent believe we will have energy problems in the future. Of those who do not believe in the possibility of a natural gas shortage, 27% believe we have energy problems now, 25% believe we will have such problems in the future. Of those who do not believe in coming electricity shortages, 40 percent believe we have energy problems now and in the future. These findings are consistent with the small number of respondents who believe shortages are and will be the cause of the problem. Twenty-six percent (26%) of the total respondents believe present problems are caused by waste; 22% believe future problems will be caused by waste. It is not necessary to believe that problems caused by waste, for example, will lead inevitably to shortages. The overall increase in the above percentages also reflects, among other things, the increase in the number of respondents who don't believe in future shortages as one moves from questions about gasoline to questions about electricity.

Respondents who believe there will be another gasoline shortage include 72% of those who believe the development of solar power will solve our problem and 65% of those who believe the answer lies in using energy more wisely (expected value, 47%). They are less apt than expected to rely on the Federal government (35%, expected value, 47%). They include all but one of the small number of respondents (8 respondents, or a total of 11 including volunteered second responses) who think the oil companies will find a solution. Relationships between respondents who expect natural gas and electricity shortages are similar but show a tendency for expecting "less affluence" to be a solution. The group expecting an electricity shortage does include, also, all but one of those (11 respondents, first and second responses) counting on fusion power to be the solution to the problem.

Those believing in a coming gasoline shortage include 68 percent of those who believe the U.S. will run out of oil, 63 percent of those who believe the world will run out of oil (expected value, 36%). They also include 63% of those who expect the U.S. and the world will run out of natural gas (expected value, 36%). Those who believe in coming natural gas shortages tend to believe U.S. and world oil and natural gas will be exhausted, (U.S. oil, 51%; U.S. natural gas, 56%; world oil, 63%; world natural gas, 71%; expected value, 36%). Relationships between future electricity shortages and possible U.S. and world exhaustion of oil and natural gas supplies are similar.

Respondents who believe in coming shortages consistently emphasize "research other sources" as the appropriate action for the government to take as a protection against possible exhaustion of supply (gasoline, 30%; natural gas, 32%; electricity, 35%; expected value, 21%) while those who do not believe in coming shortages underemphasize this solution (gasoline, 15%; natural gas, 14%; electricity, 17%; expected value, 21%).

The belief in shortages tends to be based on a fairly realistic view of events. Fewer than expected of these respondents, when asked the cause of the gasoline shortage two years ago, answered no shortage, (no shortage: gasoline, 26%; natural gas, 23%; electricity, 19%; expected value, 29%): more than expected mentioned the Arab embargo, (Arab embargo: gasoline, 6%; natural gas, 8%; electricity, 9%; expected value, 5%).

In general, those who believe in future shortages expect greater price increases in utilities than those who do not think there will be shortages. (See Figure 3.)

Figure 3 also shows clearly that more respondents expect future gasoline shortages than do not, but that for natural gas and oil the situation is reversed. Many more do not expect shortages in natural gas and electricity than do expect them. In fact, for electricity almost three respondents believe there will be no shortage for every one who does believe in coming shortages. The public has already experienced a gasoline shortage; householders in the Grand Rapids area have had no direct experience with natural gas shortages or brownouts.

There is a tendency in all those respondents who believe in the possibility of coming energy shortages to give shortage and increased demand as reasons for price increases more often than expected (for example, on the question involving natural gas; shortages, 59%; increased demand; 50%; expected value, 36%), whereas those who do not expect shortages show a slight tendency to more often blame expected price increases on the greed of the energy companies (for example, natural gas; greed, 84%; expected value, 67%).

Although few important differences from the sample as a whole appear when comparing belief in energy shortages with sources of credible information, there is a consistent tendency over all three questions on shortages (gasoline, natural gas, electricity), for respondents who believe in shortages to believe national magazines up to 20% more often than expected. This tendency is weakest in responses to coming gasoline shortages.

Although no important differences on sources of energy information exist between those who do and do not believe in a coming gasoline shortage, those who believe in coming natural gas and electricity shortages put their faith in national magazines and independent research reports 10-20% more often than expected.

The expectation of energy shortages increases with increasing levels of occupational skills and with increasing amounts of education and decreases with increasing age. Women are much more apt than expected to say they do not know if there will be a shortage (for example, on shortages of electricity, don't know, 69%, expected value, 50%) and if they think there will be a shortage, to say they have no idea when such a shortage would occur (shortages of electricity; no idea, 64%; expected value, 50%).

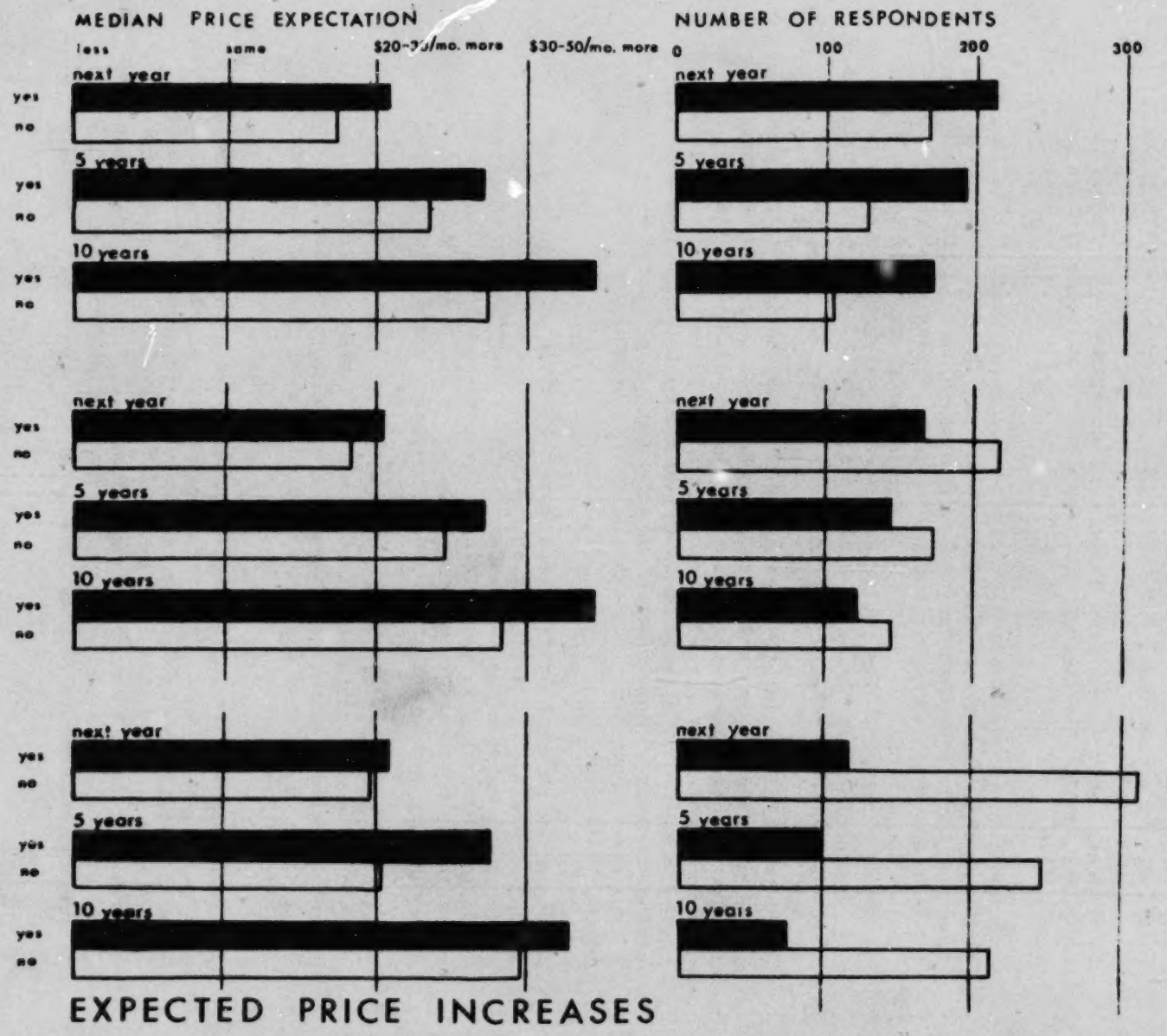

MEDIAN PRICE EXPECTATION
less
same
$20-30/mo. more
$30-50/mo. more
NUMBER OF RESPONDENTS
0
100
200
300
next year
5 years
10 years
yes
no
GASOLINE
NATURAL GAS
ELECTRICITY
EXPECTED PRICE INCREASES

FIGURE 3

IV. PRICE INCREASES

A. The Price of Gasoline

Expectations of increases in the price of gasoline next year, in five years, and in ten years are show graphically in Figure 4.[1] Three things are immediately visible on the chart. The first is the expectation of a steady rise in prices; second is the spread in the range of responses as the time frame is extended into the future; third is the decreasing number of people willing to put value on their responses as the time frame is extended.

When those who believe price increases are coming, whether next year or later, were asked what they think is the reason, 401 of them (78% of the sample) say:

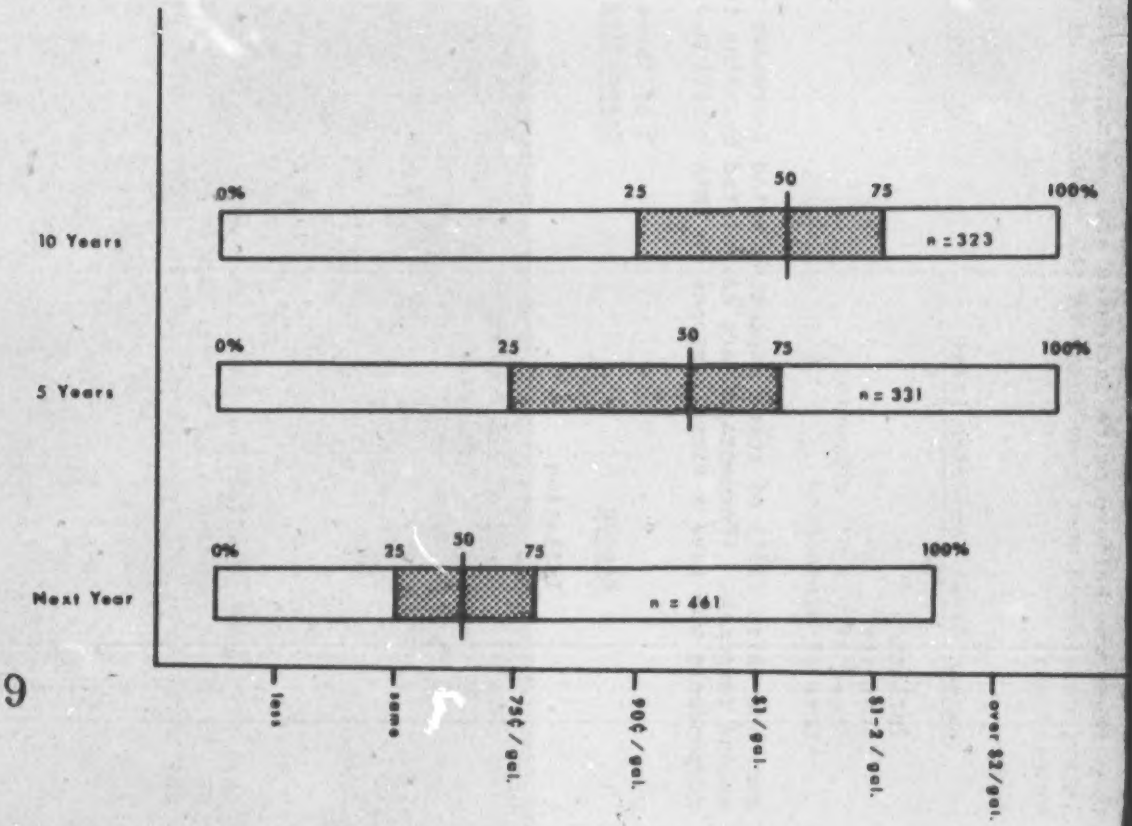
Reason Given For Price Raise	Those Responding (401 Respondents)
Inflation	30%
Scarcity	16%
Greed of big oil companies	15%
Cost of production	6%

Over one-third (35%) of these expecting price increases volunteered a second response. (Percentages are calculated by using the total of 401 respondents who gave a first response to this question.)

Reason	% of Those Responding
Inflation	1%
Scarcity	5%
Greed of oil companies	1%
Cost of production	3%

[1]Each bar shows the distribution of responses and location of the 0, 25, 50, 75 and 100 cumulative percentages, which were calculated from the total number of respondents (n) that gave a value as a response.

THE PRICE OF GASOLINE



Combining categories as well as first and second responses, certain broad categories emerge:

Categories	%
1. Inflation and inflation related (Inflation, higher wages)	27%
2. Industry (Monopoly, greed of oil companies, profit, companies holding back)	20%
3. Supply shortages (Scarcity, prices raised to cut use, not enough new sources)	19%
4. Supply costs (Research and development, cost of production, cost of imports, Arabs raise prices)	16%
5. Other (A miscellaneous scattering of responses, none over 8% of total)	17%

In comparing gasoline price expectations with responses to other questions, a few variations stand out. Respondents who feel gasoline prices will remain the same are more apt than expected to blame the gasoline shortage of two years ago on an effort to raise prices (the same, 31% average; expected value, 20%). Although plans to buy a new car do not seem much affected by next year's expected gasoline prices, 21 percent of those who expect to buy a full size car expect the price of gasoline to be the same or less five years from now while only 8 percent of those planning to buy compacts do not expect price increases. Conversely, only 7 percent of the full size car buyers expect prices to be over $1.00, 20 percent of the compact buyers expect price increases in this range. The relationships with expected price increases ten years from now are similar but not as strong due to the increase in uncertainty over the longer term.

Slightly fewer professionals and managers of big business than expected think gasoline prices will be the same or less in the mid-term (five or ten years from now) but somewhat more unskilled laborers than expected do so. Conversely, the upper occupational levels tend to expect prices over $1.00/gallon. At the lower occupational levels, the situation is reversed. Similar relationships appear in crosstabulations with educational levels. Those with little education tend to expect future gasoline prices to remain comparable with those of today; those who have gone on to graduate work expect major price increases. Expectations of major price increases decrease with increasing age, possibly a sign of wishful

thinking on the part of older respondents whose incomes tend to be more stable than those of younger persons. Women, again, tend to answer "don't know" significantly more frequently than men do.

B. Increases in Natural Gas and Electricity Bills

Respondents were also asked what increases they expected in their utility bills next year, five years from now, ten years from now, and why they expected increases.

The results of the first three questions are shown graphically in Figure 5. Again, the steady rise in utility costs is clear as is an increase in the range of prices and a decrease in the number of people willing to give a specific answer as the time frame is extended further into the future.

More startling is the size of the expected increases. In the immediate future, almost one half (46%) of the respondents expect prices to stay the same; 2 percent expect them to decrease. Contrast this with the expected situation ten years from now!

PRICE OF NATURAL GAS AND ELECTRICITY

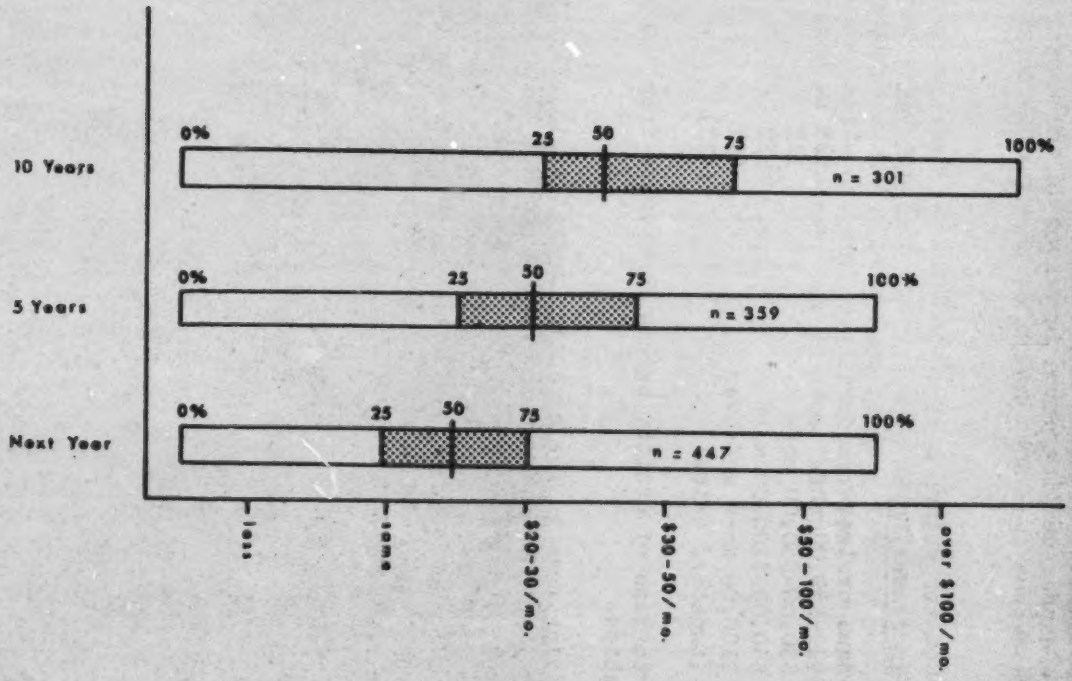
Expected Price Increases	Next Year		Ten Years from Now	
	%	Number of Respondents	%	Number of Respondents
Less	2%	(8)	1%	(7)
Same	46%	(239)	11%	(56)
$240-360/yr	35%	(182)	16%	(80)
$360-600/yr	3%	(14)	17%	(86)
$600-1200/yr	1%	(4)	11%	(56)
Over $1200/yr	None		3%	(16)

When those who expected increases were asked the reasons for the increases, 362 respondents (70%) of the sample) responded. Ordering these by broad categories shows the following:

Reason	% of Those Responding
Inflation	37%
Shortages	18%
Increased production costs	9%
Oil company greed	8%

Once again, less than 10% of the total sample attributes increases directly to decreasing resources.

SIZE OF GAS AND ELECTRIC BILLS



Interestingly enough, most of the remaining responses cover areas not considered in relationship with gasoline price increases, for example, increased demand, lack of conservation, more conveniences. Perhaps, the public utilities have offered more realistic information to the public than the oil companies; perhaps the utilities simply have more credibility.

Although, for the most part, demographic characteristics seem to have little influence on beliefs regarding possible future increases in utility bills and the causes of expected price increases, there are some interesting variations between age groups. The 25-44 year olds are most apt to expect utility price increases in ten years, the elderly the least apt to expect increases (possibly they just strongly hope there won't be any).

Utility Price Increases/Mo	25-44 Years Old	65 Years And Over
Same or less	36%	16%
$20-$30.00 more	52%	9%
$30.00-$50.00 more	52%	7%
$50.00-$100.00 more	55%	5%
$100.00 more and over	69%	1%
(Expected value)	(42%)	(17%)

Expectations of utility prices five years from now show the same relationships.

In giving reasons for expecting increases in utility bills, the young emphasize shortages and increased demand, de-emphasize greed and production costs; the 25-44 year old group emphasize increased demand and production costs, de-emphasize greed; the 45-64 year old group show a slight tendency to emphasize greed, and de-emphasize increased demand and shortages; the elderly emphasize greed as a cause, but are less aware of increased demand.

Reasons For Price Increases	Under 25 Years Old	25-44 Years Old	45-64 Years Old	65 Years And Over
Production costs	6%	57%	26%	11%
Greed	3%	29%	35%	32%
Increased demand	25%	60%	10%	5%
Shortages	30%	46%	13%	11%
(Expected value)	(14%)	(42%)	(27%)	(17%)

V. ADAPTATIONS TO SHORTAGES AND PRICE INCREASES

A. Next Car Purchase

Plans for the next car reflect respondents' beliefs concerning the possibility of a gasoline shortage.

WILL WE HAVE ANOTHER GASOLINE SHORTAGE

Plans For Next Car	Yes	No
Subcompact	69%	17%
Compact	49%	38%
Intermediate	51%	35%
Full size	45%	43%
Van or truck	38%	48%
(Expected value)	(47%)	(36%)

In addition, uncertainty leads to uncertainty. Those who have no idea what their next car will be tend to answer "yes" less often (31%) but "don't know" more often (25%) than expected.

American automobile sales provide evidence that the subcompact is not the American dream car. The survey data supports this: only 6 percent of the respondents plan to buy the smallest cars. The responses shown in the table above indicate that this 6 percent is strongly influenced by belief in future gasoline shortages. Although, other percentage differences between the two responses are modest, the tendency for "yes" answers to decrease as size of car increases is clear.

The relationship between next car purchase plans and possible energy shortages also holds for shortages of natural gas.

WILL WE HAVE A NATURAL GAS SHORTAGE

Plans For Next Car	Yes	No
Subcompact	52%	28%
Compact	46%	37%
Intermediate	35%	46%
Full size	28%	61%
Van or truck	38%	52%
(Expected value)	(36%)	(48%)

Thus, the evidence clearly suggests that belief in potential energy shortages is tied to plans for the next car purchase.

Some interesting anomolies occur in comparing next car purchase plans with credible sources of information. Both subcompact buyers and van or truck buyers trust newspapers more than expected for general information (subcompact, 21%; van or truck, 19%; expected value, 9%). Perhaps one reads and believes the newspapers very selectively seeing only those items that are of personal interest. Twenty-seven percent (27%) of those who trust national politicians plan to buy a full size car (expected value, 16%).

On energy information, again both subcompact and van or truck buyers put more faith than expected in newspapers (subcompact, 24%; van or truck, 29%; expected value, 10%). Here, however, we find that 43% of those who trust in national magazines plan to buy compacts, (expected value, 23%) and only 10% of these readers plan to buy full size cars (expected value, 16%). Those who trust reports of independent researchers are influenced somewhat differently. Thirty-three percent plan to buy compacts (expected value, 23%) but 25 percent plan to buy full size cars (expected value, 16%). Does this indicate that research reports vary widely in the conclusions they present?

B. Conservation

Respondents varied considerably in their conservation behavior. Given the current popular preconceptions of the public's attitude toward energy conservation, it is important to note that only 10 percent said they had adopted no energy conservation measures. At the other extreme, 90 percent had become involved in energy conservation; .5% had adopted five or more changes in the way they used energy.

The utilities have apparently been very effective with their information on saving natural gas and electricity. Two years after the lowering of legal speed limits, the lower speed limit is so well established that only four percent of the respondents thought to mention it as a conservation measure. As it has the force of law, it is entirely possible that many respondents never knew or have forgotten why the speed limits were changed. Conservation measures mentioned by ten or more respondents (2%) are:

Conservation Measures	% of Combined Responses
Lower temperature	62%
Less electricity	54%
Cut down car use	29%
Less hot water	8%
Carpool	6%
Buy smaller car	5%
Lower speed	4%
Walk more	2%
Build a fireplace	2%

Four percent said they had always been conservative in their use of energy.

As the number of conservation measures adopted by an individual respondent increases, so does the likelihood of belief in the existence of energy problems now. This increase is caused largely by a decrease in uncertainty regarding the problem. Those who adopted no conservation measures were much less likely to believe in the reality of energy problems.

IS THERE AN ENERGY PROBLEM NOW

Number of Conservation Measures	Yes	No	Don't Know
None	49%	47%	4%
One	58%	33%	8%
Two	67%	20%	12%
Three	64%	27%	9%
Four or more	74%	26%	-0-
(Expected value)	(63%)	(28%)	(9%)

Respondents who adopted one or no conservation measures are less apt to believe the problem is caused by waste (none or one measure, 12%; expected value, 26%), and slightly more apt to not know what the cause is (don't know, 12%; expected value, 8%). Conversely, respondents adopting four or more conservation measures are significantly more apt to believe in waste as a cause (waste, 45%; expected value, 26%), slightly more apt to give shortages (shortages, 7%; expected value, 4%) as causes of the problem.

Belief in future problems shows much the same relationships as belief in present problems.

WILL THERE BE AN ENERGY PROBLEM

Number of Conservation Measures	Yes	No	Don't Know
None	43%	47%	8%
One	67%	20%	12%
Two	64%	21%	13%
Three	69%	22%	9%
Four or more	86%	12%	2%
(Expected value)	(66%)	(23%)	(11%)

Although reasons given for coming problems do not differ greatly, those who have adopted four or more conservation measures do show certain differences. Almost twice as many as expected give shortages as a cause and more than twice as many as expected give lack of planning as a cause (shortages, 19%; expected value, 10%: lack of planning, 12%; expected value, 5%).

Although responses to the likelihood of solutions being found did not show significant variations by number of conservation measures taken, there is a slight tendency for those adopting four or more such measures to believe in the technological fix (will develop solar energy, 10%; expected value, 6%: will develop nuclear fusion, 5%; expected value, 1%: scientists will solve, 10%; expected value, 7%).

Attitudes toward the exhaustion of oil and natural gas varied significantly when analyzed by the number of conservation measures taken.

OIL AND NATURAL GAS SUPPLIES WILL RUN OUT

Number of Conservation Measures	U.S. Oil	U.S. Natural Gas	World Oil	World Natural Gas
None	18%	29%	20%	24%
One	23%	26%	17%	17%
Two	28%	30%	18%	17%
Three	38%	36%	27%	25%
Four or more	57%	45%	38%	45%
(Expected value)	(31%)	(32%)	(22%)	(22%)

One might deduce from the data that respondents who adopted one or two conservation measures were responding more to price increases by dialing down their thermostats and turning off lights, but those adopting a variety of measures are responding at least in part to the threat of shortages. Certainly, judging by their demographic characteristics (see below), price increase alone is inadequate to explain their behavior.

Although respondents adopting four or more conservation measures are not unlike the rest of the sample in their reasons for the gasoline shortage two years ago, they are somewhat more apt than expected to give the Arab embargo as a cause (Arab embargo, 14%; expected value, 5%).

Expectations of gasoline price increases vary somewhat among respondents who adopted four or more conservation measures, not always in easily explainable ways. Significantly more of them expect the price of gasoline next year to stay the same (price the same, 60%; expected value, 41%), while in five years, more than expected think it will be $1.00-$2.00 per gallon ($1.00-$2.00, 19%; expected value, 10%). In ten years, 17 percent

of these same respondents expect gasoline to cost more than $2.00 per gallon (expected value, 7%). In every case, fewer of them than expected are unable to give an expected price, although uncertainty increases for them, as for others, with time.

Also, the belief in scarcity and unavoidably higher costs, i.e. costs of production, costs of imports, etc., is significantly greater in this group (31%) than in the group who reported fewer conservation measures (19%).

These conservation-minded respondents are somewhat less apt than expected to say they trust no one for general information, more apt than expected to trust national magazines (trust no one, 10%; expected value, 18%: trust national magazines, 12%; expected value, 4%). Their responses on credible energy information are similar but more pronounced (trust no one, 7%; expected value, 21%: trust national magazines, 21%; expected value, 4%). They are also less apt to feel T.V. news is the most credible source of news (T.V. news, 40%; expected value, 49%) and more apt to find reliable news in the local newspaper (Grand Rapids Press, 19%; expected value, 10%).

Not surprisingly, this group adopting four or more conservation measures are better educated and hold positions at higher levels of occupational skills. They tend to be somewhat younger (only 7% are over 65 as opposed to 17% of the total sample) and are overwhelmingly white (96%).

It is not clear how much of this larger than average effort to conserve energy is due to price increases and how much to the expectation of shortages. Both appear to be important. Expectations of price increases seem about as expected from the total sample; however, shortages, past or future, are consistently more often mentioned by this group than by the sample as a whole.

On the question of future conservation efforts, respondents mentioned up to four measures which they were willing to adopt. There are, however, some interesting and encouraging differences between these responses and those listing conservation measures adopted in the last two years.

Future Conservation Measures	% of Combined Responses
Will do whatever asked	22%
Cut car use	15%
Lower temparature	14%
Use less electricity	14%
Have already taken all I can	11%
Will cut back more	11%
Nothing else	5%
Insulate house	4%
Carpool	3%
Buy a smaller car	3%

Twenty-two percent (22%) of these say they will do whatever they are asked, implying they don't know just what to do. One-third (32%) are prepared to make greater efforts than they have so far. Another 11% is apparently willing to conserve but does not know what more than they are already doing that they can do in the future. These respondents are asking for help and guidance. Automobile use is a significant area for further conservation efforts; 22% suggest use the car less, buying a smaller car, or forming carpools. Although substantial efforts have been made in the use of heat and electricity, one in seven respondents plan to cut down these uses. All but 18 respondents planned some conservation efforts.

There would appear to be a genuine interest in energy conservation. If conservation should become a serious focus of national policy, strongly promoted by the Federal government, the public apparently would be strongly supportive once convinced the need for conservation is real.

C. Rationing

The public prefers gasoline rationing (yes, 65%; no, 27%; don't know, 6%). Responses on this question may not be typical of other parts of the country. Grand Rapids did not have as severe a shortage as did residents of the east and west coasts. Experiences here, however, were fairly typical of the Middle West.

Those who preferred rationing tend to avoid assuming political manipulation as a cause of the gasoline shortage two years ago (political, 55%; expected value, 65%). They tend to believe national politicians more often than expected (national politicians, 77%; expected value, 65%). They also tend to find the Grand Rapids Press a more reliable source of information than other sources (Grand Rapids Press, 75%; expected value, 65%). Interestingly enough, they are planning to buy subcompacts or a van or truck (subcompact, 79%; van or truck, 76%; expected value, 65%) more often than expected. The authors invite you to explain this combination!

Their only significant demographic variation is that professionals and large business managers choose rationing less often than expected from the sample as a whole (professional et al, 57%; expected value, 65%).

Respondents who prefer higher prices differ from the sample as a whole in only a few characteristics. They tend to plan to buy an intermediate car more often than expected (intermediate, 36%; expected value, 26%). They trusted newspapers and family more often than expected (newspapers, 67%; family, 38%; expected value, 26%) and tend not to trust politicians (politicians, 15%; expected value, 26%) for general information. Demographically, they are more apt than expected to be college graduates or working as professionals or large business managers (college graduation, 38%; expected value, 26%: professional et al, 38%; expected value, 65%).

VI. CREDIBILITY OF INFORMATION SOURCES

Survey findings reflect the general cynicism so prevalent today. When asked who is trustworthy as a source of general information, 18 percent of the respondents say no one, 10 percent say they don't know. When asked about reliable sources of energy information, 21 percent say no one, 20 percent say they don't know. In short, for two out of every five respondents, there is no credible source of information on energy concerns. The situation with regard to general information was almost as discouraging; almost one out of three respondents have no credible source.

Respondents who accept a credible source for general information give the following responses:

Source	%
Family *	13%
T.V. news	11%
Newspaper	10%
National politicians	5%
The church	4%
National magazines	4%

*63% of the respondents giving family as a source were female.

Equally interesting is the low credibility of some of the more expensive and sophisticated efforts to provide in-depth T.V. coverage. Only one respondent offered T.V. documentaries as a source of reliable information; only 13 respondents offered T.V. commentators.

The question on reliable information on energy indicates a somewhat different group of sources.

Source	%
T.V. news	10%
Newspaper	10%
Federal government	8%
Independent research	5%

The Federal government is differentiated between the working government (bureaucracy) and national politicians. National politicians are mentioned by only 3% of the respondents. Oil companies, who consider themselves to have a significant mission in imparting energy information to the public and spend many millions of advertising dollars doing so, only receive a vote of confidence from one percent of the respondents. Colleges do equally poorly, again being offered by only one percent. In

the case of colleges, unlike the oil companies, there has been little effort to impart energy information; in fact, in the authors' experience, college staffs seem as uninformed themselves as the public. The category "family" drops to three percent. In our opinion, this is another strong indication of the basic realism of the public. Respondents may trust family members for general information but they know that family members share their own lack of information on energy.

Few interesting differences between the media appear when comparing the credibility of the media with the source of credible general information. Only 35 percent of those who trust national politicians for general information trust T.V. news; 57 percent of those who don't know whom to trust find T.V. most reliable as a source of news (expected value, 50%). Other than this discrepancy, the strongest pairings are, as expected, between T.V. news and T.V. news, the Grand Rapids Press and newspapers, national news magazines and national magazines.

Comparisons with credible energy information are no more revealing. Fewer than expected of those who trust national magazines (38%) and indepdendent research reports (33%) find T.V. news most reliable (expected value, 50%). Beyond this, newspapers correlate with newspapers, T.V. with T.V., national magazines with national magazines, and don't knows with don't knows.

It is, however, interesting to note that the only real discrepancies are connected with television. This may be a consequence of the more superficial coverage available on T.V. It has been estimated that the standard T.V. news broadcast contains the same number of words as one average column of newspaper print.[1] And, of course, T.V. is most effective where the news item has a visual impact. In partial support of this tenuous conclusion, it can be noted that 25% of all those who give the Arab embargo as a reason for the gasoline shortage two years ago (expected value, 15%) find national news magazines the most reliable news media, whereas slightly fewer than expected of those favoring T.V. news give the Arab embargo as a cause. On the other hand, 59 percent of those who favor waste as a cause of the shortage favor T.V. as a source of reliable news (expected value, 50%). Perhaps waste is easier to show visually than a failure to ship oil.

More detailed information on variations in credible sources of information are to be found throughout the report in discussions of the comparisons of specific questions directly with responses on the questions involving credible sources.

[1]Donald Q. Innis, "Regional Variations in T.V. Station Income" Paper given at annual meeting, American Association of Geographers, April, 1976

One should note that 50 percent of the sample find T.V. the most reliable media for news, a finding that corresponds well with the results of Roper surveys.[1] This is further corroboration of the reliability of the survey. The local newspaper is seen as most reliable by ten percent of the respondents; all print media combined (local paper, other newspapers, national news magazines) are favored by 30 percent. It seems our society is increasingly becoming watchers rather than readers. Survey results in general, however, suggest that readers are better informed.

The differences between watchers and readers can be further refined by comparison with educational levels. For example, reliance on T.V. for reliable information tends to decrease with increasing education while reliance on national news magazines and reports of independent researchers increases.

TRUST FOR ENERGY INFORMATION

Education	T.V.	National Magazines	Independent Research
Elementary	15%	None	None
Some high school	7%	2%	4%
High school graduation	11%	3%	4%
Some college	13%	3%	4%
College graduation	8%	4%	6%
Graduate school	6%	15%	11%
(Expected value)	(10%)	(4%)	(5%)

Similarly, there are clear differences in the evaluation of the credibility of the news media.

MOST TRUTHFUL NEWS MEDIA

Education	T.V.	National Magazines
Elementary	50%	7%
Some high school	60%	8%
High school graduation	56%	14%
Some college	47%	15%
College graduation	35%	29%
Graduate school	31%	22%
(Expected value)	(50%)	(16%)

Age does clearly influence opinions about credible sources of information. For example, over one-third (35%) of all respondents who trust the church are 65 and over but only 5 percent of all those that trust

[1]Wall Street Journal, May 25, 1976. Roper found that 51 percent of the people found T.V. "most truthworthy" for news.

T.V. news are over 65 (expected value, 17%). On the other hand, the young (under 25) are less apt to trust the church (4%; expected value, 14%) and are cynical about national politicians, i.e. only 4% of those who trust national politicians are under 25.

VII. DEMOGRAPHICS

The following sections are divided by major demographic category: 1) occupation; 2) education; 3) age; 4) sex. Each section is a general summary of the primary characteristics/effects of that characteristic.

Occupation:

Recognition of energy problems increases with occupational levels as does belief in the possibility of the exhaustion of oil and natural gas supplies and belief in coming energy shortages.

There are significant differences by group. Professionals and large business managers believe government should research other sources of energy and are more apt than expected to support the development of nuclear power. They do believe we had a genuine gasoline shortage but are somewhat more apt than expected to blame it on political causes. They support price increases over rationing as a means of dealing with shortages of gasoline. As expected, they already pay high utility bills and expect to pay high prices for gasoline and utilities in the future. They tend to blame these expected price increases on research and development costs, production costs, and scarcity. They are more apt than expected to have adopted four or more conservation measures.

These respondents bought a number of appliances in the last two years, particularly dishwashers, stoves, humidifiers, and trash compactors and more of them than expected plan to buy freezers. They tend to own two or more cars, and more of these than expected are compacts. This very possibly reflects the second car in the family. They plan to buy subcompacts, compacts, and sport cars more often than expected. They own fewer recreational vehicles than expected but those they do own tend to be motor homes.

White collar employees and small businessmen support technological development of alternative energy sources, showing more interest than expected in solar energy and gas derived from coal. They are no more apt to expect shortages than the sample as a whole. They pay high utility bills but in general do not expect greater increases in gasoline and utility bills than the sample as a whole. They are somewhat more apt than expected to mention import costs as a cause of gasoline price increases, less apt than expected to mention research and development costs. They are more apt than expected to have adopted four or more conservation measures. They have been buying T.V.'s, dryers, disposals, and kitchen appliances. They tend to own two or more cars and show more interest than expected in subcompacts for their next car purchase. They own fewer recreational vehicles than expected; but do own more boats than expected.

A somewhat unexpected finding is the close similarity between the skilled labor and the professional and large business manager groups. Like the highest occupational level, significantly more than expected of skilled labor believe in the future exhaustion of oil and gas supplies. They want government to push research and development of alternative sources and they are more apt than expected to blame coming price increases on high research and development costs. They expect high utility bills but are less apt to expect major increases in the price of gasoline. They tend to own two or more cars and fewer than expected recreational vehicles.

Unlike the professional and managerial group, the skilled labor tend to blame the past gasoline shortage on industry manipulation and poor management. Their utility bills are lower and they drive fewer miles. Their appliances purchases are air conditioners, washers, dryers, and dishwashers. They own fewer recreational vehicles than expected; they own noticably fewer than expected snowmobiles.

Semi-skilled and unskilled labor share many attributes. They tend to be pessimistic about finding solutions to our problems but they are less apt than expected to believe oil and gas supplies might be exhausted. They believe in rationing and stockpiling as appropriate government actions to protect us against supply problems, seldom mention research and development in this context. They are more apt than expected to not know the reason for the gasoline shortage of two years ago, less apt to mention political factors, poor management, or the Arab embargo. They support gasoline rationing but they tend not to believe we will have energy shortages in the future. More often than expected, they think that gasoline prices will be the same or less in the future; they are uncertain as to utility price increases. They rarely mention research and development as a cause of higher price increases. They are more apt than expected to have adopted no conservation measures, less apt to have adopted three or more. They drive fewer miles, own fewer cars, and buy fewer appliances than more highly trained workers. If they know what car they plan to buy next, more often than expected, it will be a full size car. They own more recreational vehicles than expected; these tend to be campers, snowmobiles, and motorcycles.

Education:

Recognition of current problems and expectations of future problems tend to increase with increasing levels of education as do belief in the possibility of exhaustion of oil and natural gas supplies, the expectation of future shortages, and expectations of price increases in gasoline and utilities.

Technological solutions to problems get little support from those with less than a high school education. These respondents tend to support rationing and stockpiling as appropriate actions for the government to take to be prepared for possible exhaustion of resources. They either

believe the gasoline shortage of two years ago did not exist or was manipulated in order to raise prices. They are somewhat less apt than expected to blame price increases on scarcity, more apt to blame them on greed. They are more apt than expected to have adopted no conservation measures or no more than one. They tend to own fewer cars; more of them than expected own no cars, fewer than expected own two cars. These cars tend to be full size. They own few recreational vehicles and have few plans to buy appliances.

On the other hand, college graduates and those with graduate education are more apt than expected to support technological solutions to problems. They are apt to blame the gasoline shortage of two years ago on poor management and industry manipulation. They support high prices over rationing as a way of dealing with gasoline shortages. More often than expected, they give research and development costs, cost of production, and scarcity as the cause of expected price increases in gasoline, increased demand as a cause of expected increases in utility rates. They tend to be owners of two cars and are much more apt than expected to own more than two cars. They plan to buy subcompacts, compacts, and intermediate size cars. They own more recreational vehicles than expected. Those who have attended graduate school are more apt than expected to have adopted four or more conservation measures.

Age:

Under 25:

The young think we have and will have energy problems but expect the problems to be solved. They believe in future gasoline and natural gas shortages but tend not to believe in an electricity shortage. Their present utility bills tend to be lower and consequently they do not expect massive increases. They have bought washing machines, stoves, and T.V.'s and are hoping to buy dishwashers and dryers. They are considering subcompacts for their next car.

25-44:

The 25-44 age group forms the core of the group who believe in energy problems, possible exhaustion of oil and natural gas supplies, and of those that expect very high gasoline prices and utility bills. They tend to tie price increases to the costs of research and development, costs of production, and scarcity and expect the government to provide research and development funds for alternative fuels. More of them than expected have adopted four or more conservation measures. They tend to own more than one car and plan to buy many more compacts and intermediates than full size cars. In the last two years, they have bought more dryers, dishwashers, freezers, humidifiers, and microwave ovens than expected and plan to buy this type of appliance in the future. They own more recreational vehicles than expected, concentrating on campers, motor homes, and motorcycles.

45-64:

This group tends to generally reflect the findings of the sample as a whole. Significant variations appear only in the following areas. More of them than expected look to nuclear power development as a solution to our problems. They tend to believe the gasoline shortage of two years ago was industry generated. They are beyond the age where heavy investment in appliances is common and they own more boats than expected. They own more than one car and represent a large share of the families that own three or more cars.

65 and Over:

The elderly tend not to believe in future energy problems and are more apt to look to non-technological solutions to solve the problems they recognize. They don't believe we will run out of oil and natural gas (72% say "no" to "is the world running out of oil") and they don't believe we are faced with shortages in the future. Their utility bills tend to be low and their expectations of massive increases are also low. Only 3% of them have adopted four or more conservation measures. They have few plans to purchase new appliances or automobiles and this group of elderly respondents owns no recreational vehicles.

Sex:

Male and female respondents are approximately equal in their recognition of present and future problems and on their expectations of future shortages. From that point on, there are significant differences.

Men look to technological solutions to problems; women tend to look to nontechnological solutions. Men are more apt to believe in the possibility of exhausting oil and natural gas supplies than women are. Men support government emphasis on technological development of alternative fuels; women don't know what the government should do.

Women pay lower utility bills; 80 percent of those paying under $20/month are women. Men expect greater price increases in gasoline and utilities. Men tend to give political and business reasons for higher gasoline and utility prices; women are more apt to give social reasons (for example, misuse, waste) or simply to say they don't know. When asked what they plan to do to conserve energy, men are more apt than expected to say "drive less", women more apt than expected to say "use less electricity". Men do drive significantly more miles per week than women do.

Women are less apt to own cars and recreational vehicles; most respondents stating they own two or more than two cars are men. Women are much more apt than men to plan to buy a subcompact for their next car.

CONCLUSIONS

To summarize broadly, it appears that the public divides into two distinct groups on energy guestions.

The larger group (over 50%) are cynical and don't trust the information they have received. They don't believe that oil and natural gas resources will ever be exhausted; they believe the gasoline shortage of two years ago was manipulated by industry and government. Many do admit we have and will have energy problems but they attribute these problems to misuse of resources and manipulation by industry and government: they do not see a connection between energy problems and diminishing supply. Although they expect price increases they blame them on inflation and direct efforts to raise prices rather than supply problems or the cost of development of new resources.

The behavior of this group is consistent with their beliefs. They have adopted few or no conservation measures. Their plans for next car purchases are not influenced by expectations of problems with gasoline supplies.

As a group, they tend to be at lower occupational levels, have had less education and are older than respondents who believe in coming energy shortages. They tend to get their information from television.

The smaller distinct group (approximately 20%) believe we have real and persistent problems, believe in the future exhaustion of oil and natural gas supplies, expect shortages in gasoline, natural gas and electricity, foresee high costs in the development and production of replacement fuels, and expect very large price increases. They tend to blame the gasoline shortage of two years ago on the Arab embargo and generally seem to have made a realistic appraisal of the energy situation. Their behavior reflects their beliefs. They have adopted a variety of conservation measures and their plans for future automobile purchases reflect a strong preference for smaller cars.

As a group, they tend to be skilled people at upper occupational levels, have a college education, and often graduate work beyond the B.A., are under 45, and get their information from newspapers, national magazines, and research reports. They have an orientation to technological solutions and expect the government to underwrite research and development costs for alternative fuels.

The remainder of the public seem consistently unsure. They don't know what to believe or whom to believe.

Given the findings of this survey, it is clear that the public will readily adopt appropriate behaviors if and when they are convinced that we will have a serious supply problem. It is also clear that "normal" approaches to educating the public will not have any more success than

they already have had. The problem is one of credibility, the credibility of the message itself and of those presenting it.

As the purpose of this study was to identify the group that is not accepting available information and to determine the barriers to communication with the hope that a sophisticated public education program could be designed to reach that group, it is appropriate to summarize our interpretation of the data.

The majority of the public includes a broad range of cynics. They are sophisticated in their ability to assess the messages they receive and they react to inconsistencies and double messages, of which there have been many, by refusing to believe what they are told. For example, one part of the Federal government (USGS) is telling us we are running low on oil and gas and it is going to get worse while another part (the Exective branch) has been touting energy independence by 1985. At the same time, we are told by the oil companies that there is plenty of gasoline and summer vacations will be no problem. A second example is the electric industry planning for growth but going to the regulating agencies to request huge rate increases not only to cover future construction but to cover increased costs of fuel today. The public responds by believing neither government or industry and considers themselves the victims of a gigantic "con" game, designed to part them from their hard-earned money.

They do believe in coming price increases, having already experienced them, and when presented with a clear-cut action they can take to protect themselves, will act accordingly. The "dial-down" message, for example, was accepted by a large majority. Simple, consistent, straightforward messages presented simultaneously by a broad range of information sources and media are apt to be most effective.

Reporting of technical information in the media is inadequate, particularly in T.V. news, the source of information for a large part of the public. In-depth T.V., in the form of commentators and documentaries, may be good entertainment but suffers from minimal credibility.

It is apparent that the public feels a lack of Federal direction, a lack of decision-making ability on the part of those who are entrusted with the protection of our future. This is the central problem of government today, affecting all facets of government policy and action, not only energy strategies. This is a problem beyond the reach of any public education program, however sophisticated.

The best hope for an effective education program is to present facts in such a way that the public is induced to make their own interpretations and reach their own conclusions. They do accept conclusions which they have internalized and do act appropriately on the basis of these conclusions.

The task of an educational program, then becomes one of designing new approaches which will lead the public to reach appropriate conclusions from their own synthesis of the data provided. We intend to design and test such approaches.

If the outside environment would begin sending consistent, non-contradictory messages, the educational task would be greatly simplified. In the absence of changes in the outside environment, the educational task will be enormously difficult.

APPENDIX I

Size of Universe

95 Percent Confidence Limits . 350,000

Size of Sample 515

	Reliability Range
5.00%	3.12 - 6.88%
10.00%	7.41 - 12.59%
15.00%	11.92 - 18.08%
20.00%	16.54 - 23.46%
25.00%	21.26 - 28.74%
30.00%	26.04 - 33.96%
35.00%	30.88 - 39.12%
40.00%	35.77 - 44.23%
45.00%	40.70 - 49.30%
50.00%	45.68 - 54.32%
55.00%	50.70 - 59.30%
60.00%	55.77 - 64.23%
65.00%	60.88 - 69.12%
70.00%	66.04 - 73.96%
75.00%	71.26 - 78.74%
80.00%	76.54 - 83.46%
85.00%	81.92 - 88.08%
90.00%	87.41 - 92.59%
95.00%	93.12 - 96.88%

APPENDIX II

GRAND VALLEY STATE COLLEGES "ENERGY INFORMATION SURVEY"

JANUARY - FEBRUARY, 1976
(Percentages are first and the N is in parenthesis.)
(Percentages for each questions which do not equal 100% are due to rounding error.)

		%	N	%	N
1.	Do you think the USA has an energy-related problem?				
	1. Yes	63%	(326)		
	2. No	28%	(142)		
	8. DK	9%	(45)		
	9. NA	0	(2)		
	If yes, what do you think are the reasons for (causes of) the problem?				
		First Response (325 Respondents)		Second Response (107 Respondents)	
	1. Waste (by people, business, government	25%	(130)	3%	(17)
	2. Foreign problems	2%	(10)	1%	(7)
	3 Lack of planning, by people, business, government	5%	(24)	6%	(30)
	4. Scare by oil industry (greed)	5%	(23)	1%	(3)
	5. Scare by government	2%	(9)	1%	(7)
	6. High costs	3%	(14)	0	(2)
	7. Shortage	4%	(21)	2%	(12)
	8. Growing population	3%	(16)	1%	(6)
	9. Lack of knowledge	1%	(6)	1%	(3)
	10. Too many cars	1%	(4)	1%	(7)
	11. The media's fault	0	(1)	0	(1)
	90. Other	5%	(25)	2%	(11)
	98. DK	8%	(42)	0	(1)

	%	N	%	N

2. Do you think there will be an energy-related problem in the future in the USA?

1.	Yes	66%	(341)
2.	No	23%	(117)
8.	DK	11%	(55)
9.	NA	0	(2)

If yes, what do you think are the reasons for (causes of) the problem?

		First Response (346 Respondents)		Second Response (108 Respondents)	
1.	Waste (by people, business, government	22%	(114)	3%	(15)
2.	Shortage-using resources faster than can be replaced	10%	(53)	3%	(16)
3.	Foreign problems	3%	(13)	1%	(5)
4.	Lack of planning by people, business, government	5%	(26)	3%	(14)
5.	Greed of industry	4%	(18)	1%	(3)
6.	Lifestyle-too many conveniences	3%	(13)	2%	(11)
7.	Growing population	5%	(25)	2%	(9)
8.	Have not developed new sources	4%	(20)	3%	(13)
9.	Too many cars	1%	(3)	1%	(4)
10.	Lack of government programs and information	1%	(5)	0	(1)
11.	Business growth	1%	(3)	0	(2)
12.	Lack of knowledge	1%	(3)	0	(2)
90.	Other	5%	(23)	2	(12)
98.	DK	5%	(27)	0	(1)

		%	N
3.	Do you think the problem will be solved in the future?		
1.	Yes	62%	(317)
2.	No	14%	(74)
8.	DK	10%	(50)
9.	NA	14%	(74)

If yes, what or who do you think will bring about a solution to the problem?

		First Response (327 Respondents)		Second Response (100 Respondents)	
1.	Concerned people	12%	(60)	2%	(11)
2.	Develop solar energy	6%	(32)	3%	(13)
3.	Develop fusion power	1%	(6)	1%	(3)
4.	Federal government	10%	(53)	4%	(18)
5.	Less affluence			0	(1)
6.	Scientists will solve	7%	(37)	1%	(7)
7.	Oil companies	2%	(8)	1%	(3)
8.	More information to people	0	(1)	1%	(6)
9.	Use energy more wisely	3%	(17)	1%	(6)
10.	Mass transit	0	(1)	0	(2)
11.	Next generation	1%	(7)	0	(1)
12.	Consumers working together	1%	(6)	0	(2)
13.	Use other sources	4%	(20)	4	(19)
14.	The Lord will see to it	1%	(5)	-	—
15.	Carpools	0	(1)	-	—
16.	Better foreign policy	1%	(3)	0	(1)
90.	Other	6%	(30)	1	(6)
98.	DK	8%	(40)	0	(1)

		%	N	%	N

4. Do you think the U.S. supplies of oil will ever be used up?

1.	Yes	31%	(160)
2.	No	54%	(279)
8.	DK	14%	(72)
9.	NA	1%	(4)

If yes, how many years do you think the U.S. supplies of oil will last? (number of years)

		(160 Respondents)	
1.	No idea	8%	(40)
2.	0-10 years	3%	(15)
3.	11-25 years	8%	(41)
4.	26-50 years	5%	(27)
5.	51-75 years	-	--
6.	76-100 years	4%	(20)
7.	101-200 years	2%	(8)
8.	Over 200 years	2%	(9)

5. Do you think the U.S. supplies of natural gas will ever be completely used up?

1.	Yes	32%	(164)
2.	No	49%	(254)
8.	DK	18%	(93)
9.	NA	1%	(4)

If yes, how many years do you think the U.S.'s supply of natural gas will last?

		(164) Respondents)	
1.	No idea	11%	(55)
2.	0-10 years	3%	(14)
3.	11-25 years	7%	(37)
4.	26-50 years	5%	(27)
5.	51-75 years	1%	(5)
6.	76-100 years	3%	(17)
7.	101-200 years	1%	(5)
8.	Over 200 years	1%	(4)

		%	N	%	N

6. Do you ever think the world supplies of oil will ever be completely used up?

1.	Yes	22%	(112)
2.	No.	70%	(362)
8.	DK	8%	(39)
9.	NA	0	(1)

If yes, how many years do you think the world's oil supplies will last?

		(111 Respondents)	
1.	No idea	8%	(39)
2.	0-10 years	1%	(5)
3.	11-25 years	1%	(6)
4.	26-50 years	2%	(11)
5.	51-75 years	1%	(7)
6.	76-100 years	3%	(14)
7.	101-200 years	2%	(11)
8.	Over 200 years	4%	(18)

7. Do you think that the world's supplies of natural gas will ever be used up?

1.	Yes	22%	(115)
2.	No	63%	(324)
8.	DK	14%	(72)
9.	NA	1%	(4)

If yes, how many years do you think the world's supply of natural gas will last? (Give numbers of years)

		(115 Respondents)	
1.	No idea	8%	(39)
2.	0-10 years	1%	(2)
3.	11-25 years	3%	(14)
4.	26-50 years	2%	(11)
5.	51-75 years	1%	(5)
6.	76-100 years	3%	(16)
7.	101-200 years	2%	(10)
8.	Over 200 years	4%	(18)

		%	N	%	N	%	N

8. What do you think the government should do to be prepared in the event oil and/or natural gas supplies could be exhausted?

		First Response (273 Respondents)		Second Response (95 Respondents)		Third Response (18 Respondents)	
1.	Research other sources	22%	(112)	4%	(21)	0	(1)
2.	Increase nuclear power	3%	(15)	3%	(15)	1%	(6)
3.	Cut down population	-	--	-	--	-	--
4.	Develop solar energy	6%	(30)	5%	(24)	1%	(3)
5.	Develop coal use	2%	(8)	1%	(3)	0	(1)
6.	Use ocean water to produce hydrogen	-	--	0	(1)	1%	(3)
7.	Rationing	3%	(12)	1%	(7)	-	--
8.	Compromise with other countries	2%	(10)	1%	(4)	0	(1)
9.	Stockpile energy	2%	(11)	-	--	-	--
10.	Cut down government spending	1%	(5)	-	--	-	--
11.	Develop new synthetic substances	1%	(3)	1%	(5)	0	(1)
90.	Other	6%	(30)	3%	(14)	0	(2)
98.	DK	7%	(37)	0	(1)	-	—

	%	N	%	N

9. A couple of years ago, there was a general gasoline shortage. What do you think was the reason for this gasoline shortage?

		First Response (512 Respondents)		Second Response (188 Respondents)	
1.	Don't believe there was a shortage	29%	(151)	3%	(15)
2.	To raise prices	19%	(99)	16%	(80)
3.	Political-government holding back	12%	(64)	3%	(17)
4.	Poor management, control, and distribution	5%	(26)	1%	(6)
5.	Decrease in Arab imports and embargo	5%	(25)	1%	(7)
6.	Waste, big cars, misappropriation	5%	(26)	0	(1)
7.	Industry generated, stockpiling, big business	8%	(41)	3%	(17)
8.	Exporting	0	(2)	-	--
9.	Israel movement	1%	(4)	1%	(4)
10.	Reduced supply, uncertainty	1%	(7)	2%	(8)
11.	Awaken people to future shortage	1%	(6)	1%	(7)
12.	Increase foreign prices	1%	(6)	-	--
13.	Dishonesty	0	(2)	1%	(7)
90.	Other	4%	(19)	4%	(19)
98.	DK	7%	(34)	-	--

		%	N
10.	If this were to happen again, which of these alternatives would you choose for you and your family?		
	1. Gasoline rationing, enough for basic needs at current prices	65%	(336)
	2. Higher gasoline prices but all the gas you need and want	27%	(137)
	8. DK	6%	(31)
	9. NA	2%	(11)
11.	Do you think we will have another gasoline shortage?		
	1. Yes	47%	(243)
	2. No	36%	(184)
	8. DK	16%	(84)
	9. NA	1%	(4)
	If yes, how many years from now will we have another gasoline shortage?		
		(241 Respondents)	
	1. No idea	11%	(57)
	2. 0-4 years	19%	(96)
	3. 5-10 years	14%	(72)
	4. 11-20 years	2%	(10)
	5. 21-30 years	1%	(5)
	6. 31-50 years	0	(1)
	7. 51-100 years	-	--
	8. Over 100 years	-	--
12.	Do you think we will have a natural gas shortage?		
	1. Yes	36%	(187)
	2. No	48%	(245)
	8. DK	16%	(82)
	9. NA	0	(1)

		%	N
	If yes, how many years from now will we have a natural gas shortage?		
			(185 Respondents)
1.	No idea	9%	(47)
2.	0-4 years	12%	(62)
3.	5-10 years	8%	(40)
4.	11-20 years	3%	(14)
5.	21-30 years	2%	(8)
6.	31-50 years	1%	(6)
7.	51-100 years	1%	(5)
8.	Over 100 years	1%	(3)
13.	Do you think we will have an electricity shortage?		
1.	Yes	24%	(124)
2.	No	68%	(352)
8.	DK	7%	(36)
9.	NA	0	(2)
	If yes, how many years from now will we have an electricity shortage?		
			(122 Respondents)
1.	No idea	5%	(24)
2.	0-4 years	9%	(44)
3.	5-10 years	7%	(34)
4.	11-20 years	2%	(8)
5.	21-30 years	1%	(6)
6.	31-50 years	0	(2)
7.	51-100 years	1	(3)
8.	Over 100 years	0	(1)
14.	On the average, how much do you pay for gas and electricity a month? (Annual basis-average of summer and winter)		
1.	Less than $20	6%	(30)
2.	$20-$40	35%	(181)
3.	$40-$60	34%	(175)
4.	More than $60	12%	(60)
8.	DK	12%	(59)
9.	NA	2%	(10)

		%	N
15.	If you rent, are your utilities included in your rent?		
			(130 Respondents)
1.	Yes	13%	(69)
2.	No	11%	(58)
8.	DK	1%	(3)
	If respondent responds some are, some are not - list those utilities that are included and those which are not included.		
			(38 Respondents)
1.	Heat yes, electricity no	3%	(18)
2.	Electricity yes, heat no	0	(1)
3.	Water yes, heat and electricity no	2%	(10)
7.	Other	2%	(9)
8.	DK	-	--
16.	Does your rent go up when your utilities go up?		
			(122 Respondents)
1.	Yes	4%	(19)
2.	No	17%	(87)
8.	DK	3%	(16)
17.	How much more, or less, are your gas and electricity bills compared with those you paid two years ago?		
1.	About the same	6%	(32)
2.	Have decreased	2%	(11)
3.	Increased less than $10/month	23%	(120)
4.	Increased $10-$20/month	37%	(189)
5.	Increased $20-$50/month	12%	(64)
6.	Increased more than $50/month	1%	(6)
8.	DK	16%	(83)
9.	NA	2%	(10)

		%	N	%	N	Combined Percent
18.	Have you bought any additional (not replacement) appliances in the last two years?					
1.	Yes	32%	(166)			
2.	No	66%	(344)			
8.	DK	-	--			
9.	NA	1%	(5)			
	If yes, what appliances did you buy?					
		First Response (167 Respondents)		Second Response (76 Respondents)		
1.	T.V.	2%	(9)	1%	(3)	2%
2.	Air conditioner	3%	(13)	0	(2)	3%
3.	Washer	4%	(22)	0	(2)	5%
4.	Dryer	1%	(7)	4%	(19)	5%
5.	Dishwasher	4%	(21)	1%	(5)	5%
6.	Freezer	4%	(18)	1%	(3)	4%
7.	Stove	1%	(7)	1%	(4)	2%
8.	Refrigerator	0	(2)	1%	(7)	2%
9.	Humidifier	2%	(9)	1%	(5)	2%
10.	Power tools	0	(2)	-	--	0
11.	Stereo	1%	(7)	1%	(4)	2%
12.	Radio	-	--	0	(2)	0
13.	Garbage disposal	1%	(3)	-	--	1%
14.	Sewing machine	-	--	0	(2)	0
15.	Trash compactor	0	(2)	-	--	0
16.	Microwave oven	2%	(8)	0	(1)	2%
17.	Small kitchen appliances	4%	(20)	1	(7)	5%
18.	None	0	(2)	-	--	0
90.	Other	3%	(13)	2	(10)	4%
98.	DK	0	(2)	-	--	0

		First Response %	First Response N	Second Response (37 Respondents) %	Second Response (37 Respondents) N	Combined Percent
19.	What new appliances (not replacements), if any, do you plan to buy in the next two years?					
1.	T.V.	1%	(5)	0	(1)	1%
2.	Air conditioner	1%	(3)	-	--	1%
3.	Washer	3%	(17)	-	--	3%
4.	Dryer	1%	(5)	3%	(14)	4%
5.	Dishwasher	3%	(13)	1%	(4)	3%
6.	Freezer	4%	(20)	0	(1)	4%
7.	Stove	2%	(7)	1%	(5)	3%
8.	Refrigerator	1%	(6)	1%	(5)	2%
9.	Humidifier	1%	(4)	0	(1)	1%
10.	Power tools	1%	(3)	0	(1)	1%
11.	Stereo	-	--	0	(2)	0
12.	Radio	0	(1)	-	--	0
13.	Garbage disposal	0	(1)	0	(1)	0
14.	Sewing machine	0	(1)	-	--	0
15.	Trash compactor	0	(2)	-	--	0
16.	Microwave oven	1%	(6)	-	--	1%
17.	Small kitchen appliances	1%	(4)	0	(1)	1%
18.	None	78%	(401)	-	--	78%
90.	Other	1%	(6)	0	(1)	1%
98.	DK	2%	(8)	-	--	2%
99.	NA	1%	(3)	-	--	1%

		%	N
20.	How much do you think the price of a gallon of gasoline will be next year?		
1.	Less than now	2%	(11)
2.	Same as now	41%	(213)
3.	75¢ a gallon	37%	(188)
4.	90¢ a gallon	4%	(19)
5.	$1.00 a gallon	5%	(27)
6.	$1.00 - $2.00	1%	(3)
7.	More than $2.00 a gallon	-	--
8.	DK	10%	(52)
9.	NA	0	(2)

		%	N
21.	How much do you think a gallon of gasoline will be in five years?		
	1. Less than know	4%	(20)
	2. Same as now	7%	(38)
	3. 75¢ a gallon	19%	(97)
	4. 90¢ a gallon	9%	(46)
	5. $1.00 a gallon	24%	(125)
	6. $1.00 - $2.00 a gallon	10%	(50)
	7. More than $2.00 a gallon	1%	(5)
	8. DK	25%	(131)
	9. NA	1%	(3)
22.	How much do you think the price of a gallon of gasoline will be in ten years?		
	1. Less than now	3%	(14)
	2. Same as now	5%	(25)
	3. 75¢ a gallon	6%	(32)
	4. 90¢ a gallon	5%	(24)
	5. $1.00 a gallon	17%	(88)
	6. $1.00 - $2.00 a gallon	21%	(106)
	7. More than $2.00 a gallon	7%	(34)
	8. DK	20%	(104)
	9. NA	17%	(88)

23. What do you think would be the reason for these increases?

		First Response %	First Response N	Second Response (131 Respondents) %	Second Response (131 Respondents) N
1.	Inflation	24%	(122)	1%	(6)
2.	Research and development	2%	(12)	1%	(6)
3.	Cost of production	5%	(24)	3%	(13)
4.	Cost of imports	1%	(7)	2%	(9)
5.	Political control of fuel	4%	(19)	1%	(4)
6.	Monopoly	0	(1)	1%	(4)
7.	Scarcity	13%	(65)	4%	(22)
8.	Tax increases	1%	(5)	1%	(3)
9.	Greed by big oil companies	12%	(61)	1%	(6)
10.	Price raised to cut use.	1%	(7)	1%	(4)
11.	Not enough new sources	1%	(5)	1%	(5)
12.	Profit	2%	(10)	3%	(13)
13.	Waste	2%	(12)	1%	(4)
14.	Higher wages	2%	(8)	2%	(8)
15.	Arabs raise prices	0	(2)	1%	(4)
16.	U.S. companies holding back	1%	(6)	0	(1)
90.	Other	5%	(26)	3	(16)
98.	DK	2%	(9)	0	(2)
99.	NA	22%	(114)	-	--

24. How much do you think your gas and electricity bills will be next year compared to this year?

		%	N
1.	Less than now	2%	(8)
2.	About the same	46%	(239)
3.	$20-$30/month more	35%	(182)
4.	$30-$50/month more	3%	(14)
5.	$50-$100/month more	1%	(4)
6.	Over $100/month more	-	--
8.	DK	12%	(61)
9.	NA	2%	(8)

		%	N
25.	How much do you think your gas and electricity bills will be in five years compared to this year?		
	1. Less than now	1%	(6)
	2. Same as now	16%	(84)
	3. $20-$30/month more	30%	(152)
	4. $30-$50/month more	17%	(88)
	5. $50-$100/month more	5%	(27)
	6. Over $100/month more	0	(2)
	8. DK	29%	(147)
	9. NA	2%	(9)
26.	How much do you think your gas and electricity bills will be in ten years compared to this year?		
	1. Less than now	1%	(7)
	2. About the same	11%	(56)
	3. $20-$30/month more	16%	(80)
	4. $30-$50/month more	17%	(86)
	5. $50-$100/month more	11%	(56)
	6. Over $100/month more	3%	(16)
	8. DK	39%	(202)
	9. NA	2%	(10)

27. What do you think would be the reason for these increases?

	First Response		Second Response (48 Respondents)	
	%	N	%	N
1. Inflation	28%	(143)	1%	(5)
2. Increased production costs	7%	(36)	1%	(5)
3. Shortages	9%	(46)	2%	(8)
4. Greed of oil companies	6%	(32)	1%	(5)
5. Population increase	3%	(13)	1%	(5)
6. Increased demand	4%	(20)	1%	(5)
7. High research and development costs	2%	(9)	1%	(6)
8. Lack of planning	1%	(4)	-	--
9. More conveniences/ lazy people	1%	(5)	-	--
10. Lack of conservation	2%	(8)	0	(1)
11. Crooked politics	0	(1)	-	--
12. Political deals	1%	(7)	-	--
13. Other	3%	(17)	2%	(8)
14. DK	4%	(21)	-	--
15. NA	30%	(153)	-	--

28. What steps have you taken in the last year to save energy?

		1st Resp. (514)	2nd Resp. (351)	3rd Resp. (162)	4th Resp. (41)	5th Resp. (3)	6th Resp. (1)	Combined Percent
1.	Cut down car use	12% (64)	8% (43)	7% (36)	2% (8)	--	--	29%
2.	Bought smaller car	3% (16)	1% (5)	1% (3)	0 (2)	--	0 (1)	5%
3.	Lower speed	1% (4)	1% (4)	2% (8)	0 (2)	--	--	4%
4.	Ride bike	0 (2)	0 (1)	1% (3)	--	--	--	1%
5.	Walk more	1% (3)	1% (3)	0 (1)	0 (1)	--	--	2%
6.	Turn down temperature	45% (230)	15% (77)	2% (11)	0 (2)	--	--	62%
7.	Use less electricity	15% (79)	29% (147)	9% (44)	1 (6)	0 (1)	--	54%
8.	Use less hot water	1% (6)	4% (19)	2% (10)	1 (4)	0 (1)	--	8%
9.	Have a home garden	--	--	--	0 (2)	--	--	0
10.	Was always conservative user	2% (9)	1% (6)	1% (3)	--	--	--	4%
11.	Nothing	10% (53)	0 (2)	--	--	--	--	11%
12.	Carpool	1% (3)	2% (9)	3% (13)	1% (3)	0 (1)	--	6%
13.	Less T.V.	--	0 (1)	0 (1)	0 (1)	--	--	1%
14.	Build a fireplace	1% (6)	0 (2)	0 (2)	--	--	--	2%
90.	Other	7% (37)	6% (31)	5% (28)	2 (10)	--	--	21%
98.	DK	0 (2)	0 (1)	--	--	--	--	1%
99.	NA	--	--	--	--	--	--	-

	%	N	%	N	%	N	%	N

29. What steps are you willing to take in the future to avoid energy shortages?

	1st Resp. (514)		2nd Resp. (159)		3rd Resp. (150)		4th Resp. (10)		Combined Percent
1. Cut car use	9%	(48)	4%	(19)	1%	(6)	0	(2)	15%
2. Buy smaller car	2%	(10)	1%	(3)	1%	(3)	--		3%
3. Lower speed	0	(1)	0	(1)	--		--		0
4. Ride bike	1%	(3)	0	(2)	0	(1)	0	(1)	1%
5. Walk more	1%	(4)	1%	(3)	0	(1)	--		2%
6. Turn down temperature	11%	(58)	3%	(14)	0	(1)	--		14%
7. Use less electricity	5%	(26)	7%	(35)	2%	(10)	--		14%
8. Use less hot water	0	(2)	2%	(8)	--		0	(2)	2%
9. Home garden	0	(1)	1%	(3)	0	(1)	--		1%
10. Always conservative with energy	1%	(6)	0	(2)	--		--		2%
11. Whatever I'm asked to	20%	(102)	1%	(7)	0	(2)	--		22%
12. Cut back more	8%	(40)	2%	(11)	1	(6)	0	(1)	11%
13. Already taken steps I can	10%	(52)	1%	(3)	0	(2)	--		11%
14. Nothing else	5%	(24)	0	(2)	--		--		5%
15. Won't be a shortage	1%	(5)	0	(1)	--		--		1%
16. Gas rationing	3%	(13)	0	(2)	0	(1)	--		3%
17. Force others to cut down	0	(1)	0	(2)	--		--		1%

		%	N	%	N	%	N	%	N	Combined Percent
18.	Nothing at all	3%	(16)	—		--		--		3%
19.	Carpool	2%	(9)	1%	(5)	0	(2)	0	(1)	3%
20.	Less T.V.	--		0	(1)	--		--		0
21.	Build fireplace	--		0	(2)	0	(2)	--		1%
22.	Increase insulation	2%	(9)	1%	(7)	1	(4)	--		4%
90.	Other	6%	(32)	4%	(21)	1	(4)	0	(3)	11%
98.	DK	10%	(52)	1%	(5)	--		--		12%

30. Whom do you trust the most as a source of reliable information?

		First Response		Second Response (69 Respondents)	
		%	N	%	N
1.	No one	18%	(92)	0	(1)
2.	Newspaper	10%	(49)	2%	(11)
3.	T.V. news	11%	(58)	4%	(20)
4.	T.V. commentators	2%	(10)	1%	(3)
5.	T.V. documentaries	0	(1)	-	--
6.	National magazines	4%	(19)	1%	(5)
7.	Politician (senator, representative	5%	(26)	0	(1)
8.	Church-ministers, priests, bible	4%	(23)	1%	(3)
9.	Local politicans	0	(1)	-	--
10.	Family	13%	(69)	0	(2)
11.	Friends	4%	(19)	1%	(6)
12.	'Professional' people	3%	(15)	0	(2)
13.	Organizations (labor unions, business)	3%	(13)	1%	(5)
14.	No single source	4%	(22)	0	(1)
90.	Other	8%	(40)	2%	(9)
98.	DK	10%	(54)	-	--
99.	NA	1%	(4)	-	--

		%	N	%	N
31.	Whom do you trust the most as a source of reliable information on energy problems?	First Response		Second Response (43 Respondents)	
1.	No one	21%	(107)	0	(1)
2.	Newspaper	10%	(52)	1%	(52)
3.	T.V.	10%	(51)	3%	(17)
4.	National magazines	4%	(21)	1%	(3)
5.	Oil companies	1%	(6)	0	(1)
6.	National politiicians	3%	(14)	-	--
7.	Local politicians	1%	(5)	0	(1)
8.	Federal government	8%	(42)	1%	(3)
9.	Friends	2%	(10)	0	(1)
10.	Family	3%	(15)	-	--
11.	Colleges	1%	(6)	0	(1)
12.	Independent research	5%	(23)	-	--
90.	Other	11%	(54)	2%	(9)
98.	DK	20%	(103)	0	(1)
99.	NA	1%	(6)	-	--

		%	N
32.	Which form of the news media do you think presents the most truthful view of the news and other events?		
1.	T.V.	50%	(256)
2.	Radio	6%	(29)
3.	Grand Rapids Press	10%	(50)
4.	Other newspapers	5%	(28)
5.	National news magazines	16%	(80)
6.	Other	9%	(48)
8.	DK	3%	(16)
9.	NA	2%	(8)

		%	N
33.	Do you usually look at the classified ads in the newspaper?		
1.	Yes	55%	(285)
2.	No	45%	(230)

		%	N
34.	Have you ever used these ads to buy, sell, or trade articles?		
	1. Yes	65%	(335)
	2. No	34%	(177)
	8. DK	0	(2)
	9. NA	0	(1)
35.	How do you find out about neighborhood events you might want to attend?		
	1. Bulletin	19%	(99)
	2. Posters in the street	4%	(19)
	3. Posters in store window	3%	(13)
	4. Friend	20%	(101)
	5. Radio	6%	(31)
	6. Other	40%	(203)
	8. DK	5%	(27)
	9. NA	4%	(21)
36.	How many miles does your family drive in a week?		
	1. Less than 100 miles	35%	(182)
	2. 100-200 miles	30%	(154)
	3. 200-300 miles	12%	(64)
	4. 300-500 miles	8%	(39)
	5. More than 500 miles	7%	(34)
	8. DK	2%	(11)
	9. NA	6%	(31)
37.	How many cars do you and your family own?		
	1. None	12%	(60)
	2. 1	38%	(198)
	3. 2	35%	(180)
	4. 3	9%	(47)
	5. 4	4%	(21)
	6. 5	1%	(5)
	7. 6	1%	(3)
	8. DK	-	--
	9. NA	0	(1)

38. What kind of cars are they?

	1st Car		2nd Car		3rd Car		4th Car		5th Car		Combined Percent of All Cars in Sample (811 Cars)	
	%	N	%	N	%	N	%	N	%	N	%	N
1. Subcompact	3%	(16)	2%	(8)	1%	(5)	0	(1)	---		4%	(30)
2. Compact	11%	(58)	6%	(32)	3%	(14)	1%	(5)	1%	(4)	14%	(113)
3. Intermediate	37%	(188)	21%	(107)	5%	(26)	2%	(12)	---		41%	(335)
4. Full size	31%	(160)	15%	(77)	3%	(14)	1%	(4)	10%	(2)	32%	(257)
5. Sport	1%	(4)	2%	(8)	1%	(6)	0	(2)	---		2%	(20)
6. Van or truck	5%	(25)	5%	(25)	1%	(6)	0	(2)	---		7%	(58)
7. None	3%	(13)	---		---		---		---		-	--
9. NA	10%	(51)	50%	(258)	86%	(444)	95%	(489)	99%	(509)		

39. What kind do you think your next car will be?

	1st Car		2nd Car		Combined Percent of All Cars Planned (433 Cars)	
	%	N	%	N	%	N
1. Subcompact	6%	(30)	1%	(4)	8%	(34)
2. Compact	23%	(119)	2%	(11)	30%	(132)
3. Intermediate	27%	(139)	2%	(8)	34%	(147)
4. Full size	17%	(85)	1%	(5)	21%	(90)
5. Sport	1%	(5)	0	(2)	2%	(7)
6. Van or truck	4%	(21)	1%	(4)	6%	(25)
7. None	10%	(52)	---		-	--
8. DK	10%	(50)	---		-	--
9. NA	3%	(14)	93%	(481)	-	--

	%	N
40. Do you own any motorized recreation vehicles?		
1. Yes	24%	(122)
2. No	76%	(391)
9. NA	0	(2)
If yes, what kind?		
1. Camper	3%	(17)
2. Motor home	1%	(5)
3. Boat	7%	(37)
4. Snowmobile	3%	(17)
5. Motorcycle	6%	(32)
6. Jeep	-	—
7. Other	3%	(13)
8. DK	-	--
9. NA	77%	(394)
41. How do you heat your house?		
1. Natural gas	92%	(475)
2. Fuel oil	3%	(16)
3. Electricity	0	(2)
4. Butane gas	0	(2)
5. Coal	-	--
6. Other	1%	(6)
8. DK	2%	(11)
9. NA	1%	(3)

		%	N
42.	What is your occupation?		
0.	No answer	1%	(4)
1.	Large Business, Professional (Bankers, manufacturers, large department store owners and managers, physicians, dentists, attorneys, teachers, engineers)	16%	(80)
2.	Small Business/ White Collar (Clerks & kindred workers, salesmen, agents, technicians, small retail dealers, contractors, proprietors of repair shop)	20%	(105)
3.	Skilled Manual Workers and Foremen (Carpenters, machinists, plumbers, masons, printers, barbers, cooks)	16%	(82)
4.	Semi-skilled Manual Workers (Truck drivers, machine operators, service station attendants, waiters, counterman)	17%	(87)
5.	Unskilled Manual Workers (Garage laborers, sweepers, porters, janitors, street cleaners, construction laborers)	3%	(16)
6.	Housewives	10%	(53)
8.	Retired	12%	(59)
9.	Unemployed Welfare, ADC, student, etc.	6%	(29)

		%	N
43.	How much education has the head of household had?		
	1. Elementary school	8%	(43)
	2. Some high school	19%	(99)
	3. High school graduation	26%	(136)
	4. Some college	23%	(118)
	5. College graduation	10%	(53)
	6. Some graduate work	3%	(13)
	7. Graduate degree	8%	(41)
	8. DK	0	(1)
	9. NA	2%	(8)
44.	Number of replacement addresses	16%	(84)
45.	Age		
	1. Under 25	14%	(70)
	2. 25-44	42%	(215)
	3. 45-64	27%	(141)
	4. 65 and over	17%	(88)
	9. NA	0	(1)
46.	Sex		
	1. Male	50%	(259)
	2. Female	50%	(256)
47.	Ethnic background		
	1. Caucasian	89%	(457)
	2. Black	9%	(46)
	3. Spanish American	1%	(5)
	4. Oriental	1%	(3)
	5. American Indian	-	—
	6. Other	-	--
	8. DK	0	(1)
	9. NA	1%	(3)